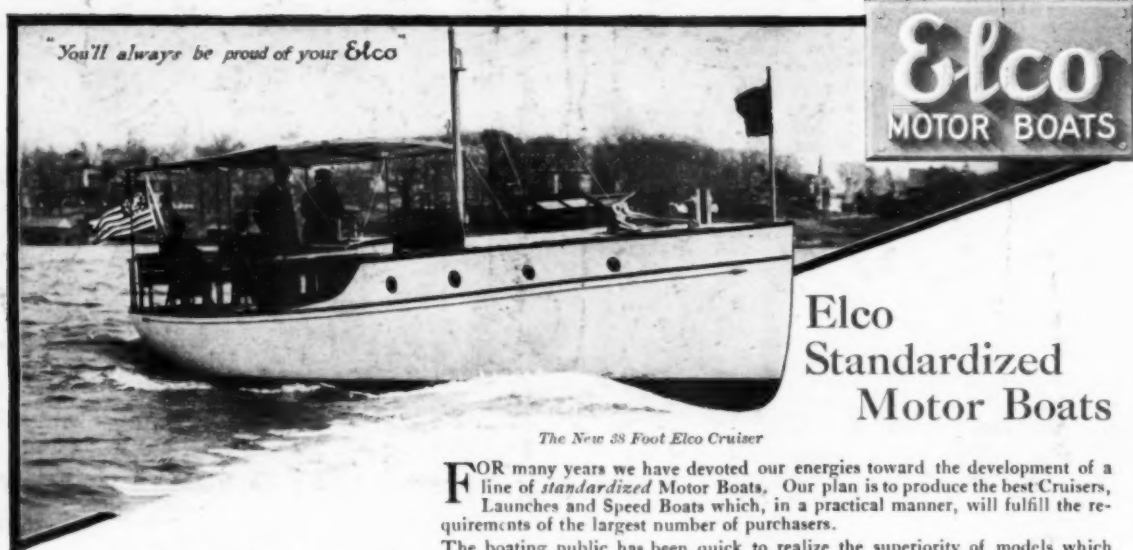


MOTOR BOATING



THE MOTORBOAT SHOWS



Elco Standardized Motor Boats

The New 38 Foot Elco Cruiser

FOR many years we have devoted our energies toward the development of a line of *standardized* Motor Boats. Our plan is to produce the best Cruisers, Launches and Speed Boats which, in a practical manner, will fulfill the requirements of the largest number of purchasers.

The boating public has been quick to realize the superiority of models which have been carefully *standardized* and the economy of buying boats which are built in large numbers at one time.

The value of a boat for resale is always enhanced by the fact that it is of standard design and built by a Company whose reputation is beyond question.

Write for Catalogue of "Marine Views"

Visit our exhibit at the
MOTOR BOAT SHOWS
Madison Sq. Garden, New York
January 31st to February 7th

Coliseum, Chicago, Ill.
February 28th to March 7th

The Elco Company 201 Avenue A, Bayonne, N. J.
27 minutes from Liberty and 23rd Street Ferries, Central Railroad of N. J. to West 8th Street.
Telephone 470 Bayonne



COMMODORE
Party Fishing Boat
65 H. P. Standard

HENRY WRIGHT
(Owner)
East Rockaway, L. I.

REAL PROGRESSIVENESS

is steady, gradual growth. Perfection comes only through evolution.

A revolution of claims today to cover up the experimental device of yesterday can't make a perfect engine.

Sane, Consistent Evolution of Parts has made THE STANDARD ENGINE

It is the gradual development, the standardization of parts which has given this finished product, this simple, smooth running, economical machine.

The high priced ad writer can't make such an engine.

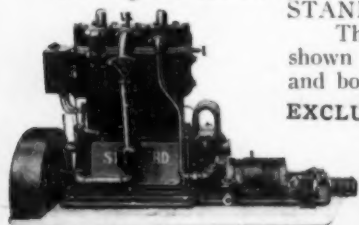
Such can't be built in a day, in spite of the verbal guarantee back of the newly designed article. It can't be done by jumping from one design to another, one appliance to another.

The engine's success (your boat's success) is only had by the years of unfailing progressive purpose in the STANDARD policy of designing, building and serving you.

The STANDARD'S reward is the always increasing STANDARD following as shown by Lloyd's and all shipping records and by the acclaim of STANDARD owners and boating men. This, too, is your proof.

EXCLUSIVE FEATURES:—Governor Control, Virgin Lubrication, Operative Ignition.

Back of the STANDARD guarantee is the



STANDARD MOTOR CONSTRUCTION COMPANY
178 WHITON STREET
JERSEY CITY, N. J.

Contents



Barracuda, Jr., a 26-foot V-bottom runabout with a 30-50 Sterling motor.

New York and Chicago Show Forecast Number

Afternoon on the Bay
Frontispiece

The New York and Chicago
Motor Boat Shows..... 3

The Problem of Getting
Speed 4

A Modern Motor House-Boat..... 6

A 100-H.P. Alcohol Marine Engine..... 7

Relative Relation of Bore and Stroke in Two- and
Four-Cycle Motors 8

Progress in Aerial Propulsion Abroad..... 9

An Air-Propelled Barge..... 10

Suggestions for Handicapping..... 10

Prize Contest in Questions and Answers—

The Efficiency of Bilge Keels..... 11

Installing the Throttle and Spark Controls..... 12

Getting a New Motor Aboard
of a Cruiser..... 14

The New York and Chicago
Shows—

Exhibitors at the 1914
Motor Boat Shows.... 16

Forecast of the Exhibits at New York and Chi-
cago 17-30

How to Build a 28-Foot Cruiser, Part I..... 31

A Life Boat Cruiser..... 34

A Buffalo Powered Boat..... 35

Marine Motors—

Scripps, Eagle, Kahlenberg and Kermath..... 36

Stunts and Devices..... 38

Letters from Motor Boating Readers..... 39

New Things for the Motor Boatman..... 41

Yard and Shop..... 42

February, 1914

**MOTOR
BOATING**

Vol. XIII, No. 2

THE NATIONAL MAGAZINE OF MOTOR BOATING

Entered as second-class matter at New York, N. Y., Post Office.

Copyright, 1914, by MoToR BoatinG

Published Monthly by New Publication Company, 119 West Fortieth Street, New York City

G. L. Willson, President

George von Utassy, Treasurer

C. J. Shearn, Secretary

Telephone: Bryant 8760.

Cable Address: Motoria

10 cents a copy. Subscription, \$1.00 a year

European Agents: Saarbach's News Exchange, Mainz, Germany



The afternoon sun, emerging from a bank of clouds, begins to mark its western route in the silvery waters, and a slight breeze springing up sends the laughing ripples lapping against the hull in soft, murmuring whispers.



New York and Chicago Shows

The Exceptional Quality of the Annual Exhibitions This Year and the Healthful Condition of the Trade. A Change of Show Schedules Which Is of Benefit to Everyone.

SHOW time again! The moment which every motor boatman has been looking forward to since he hauled his boat out last fall and made her snug under a dry covering for the winter has arrived. January 31st marked the day in the motor boating world at least, when the ground hog came out of his hole and, not seeing his shadow, knew that the back of winter had been broken and that from that day the world would take on new life. For on that day the Annual Motor Boat Show opened in Madison Square Garden, New York City, and crowds even greater than generally flow in on the opening night were waiting the opportune moment.

What they were to see and learn was worth all the slow going and expectant two months previous, for the National Association of Engine and Boat Manufacturers had not been idle even though the wind had been cold from the nor'west and the rivers and creeks were ice-bound. From more standpoints than one they had produced a show the like of which had never before been even approached.

We find the policy of moving the dates for the New York Show ahead some three weeks is a most popular one, and the idea of giving our Western motor boatmen a chance to view the progress in this field, gives every reason to make us believe that the first Motor Boat Show held in Chicago for many years will be a grand success. When this departure from the old and time-worn custom of arranging the New York and Boston Shows was first tentatively suggested last summer, there were few advocates in its favor. However, those who were strong for this new and up-to-date plan stuck by their convictions and now we find both the owner and the trade benefiting by it.

Looking over the list of exhibitors, we find few, yes, very few of those who are to be at Chicago later this month and the first week of next who are not on the job at the

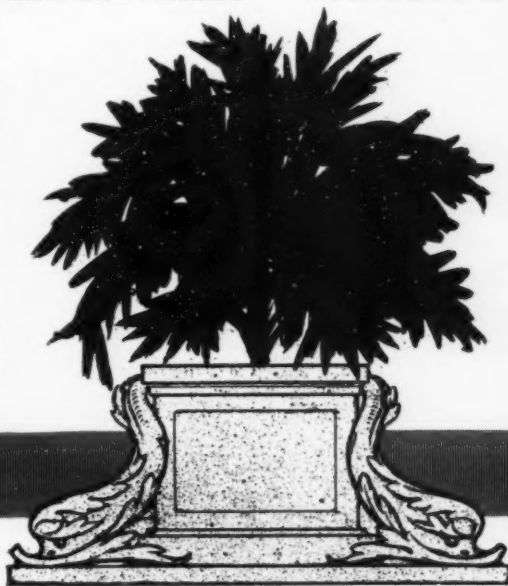
Garden. Those few who are not, are simply guided by local consideration, so one may safely assume that both shows are national in their scope and representation.

All of our old friends in the trade are with us again this year—firms which did so much to foster the sport and trade in its infancy again show the result of their foresight in what is now one of America's foremost industries. Those who exhibited for the first time in 1912 or 1913 are, almost without exception, again on the firing line.

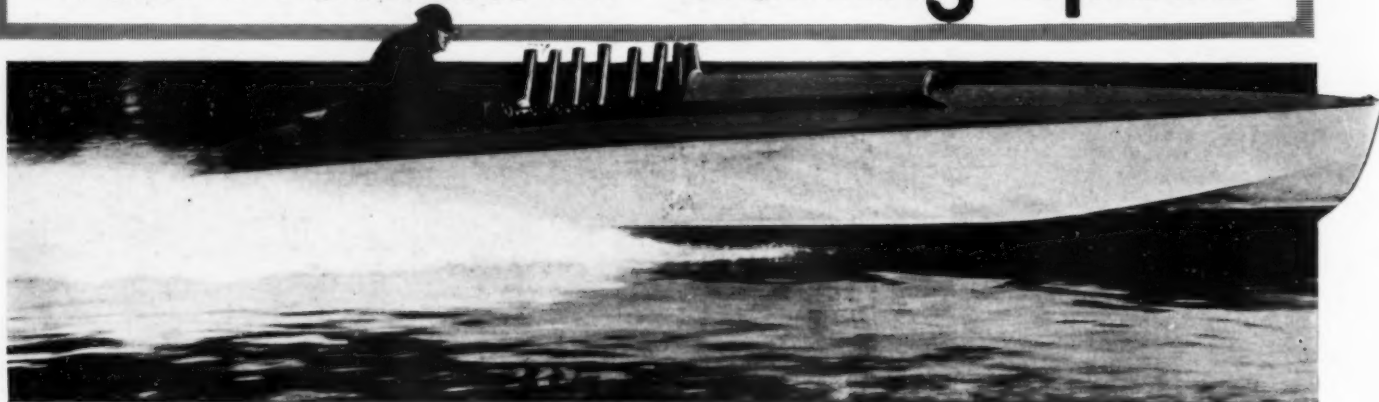
If one should ask what the greatest tendency the present show seems to indicate is, the answer would invariably be "Standardization." We see it on every side. For example—in the boats and hulls alone, we find a greater effort on the part of the manufacturers to give the user something that is really usable. Usable, not only on stated occasions, but for all purposes for which they are designed, not by having a great number and variety of models, but by limiting these to a few and embodying in each some strong and characteristic features which are the result of much thought and study and show a thorough and inside knowledge of the subject.

The same is true of the engine exhibits—especially the newer models. Everyone has come to realize that both the two- and four-cycle models have their particular uses, and there is no reason why one should be exalted to the exclusion of the other—provided, of course, that which is physically impossible is not attempted. We see more manufacturers turning out both two- and four-cycle products than ever before. Also we notice a sane discrimination between the heavy duty and the light weight, high speed motor, suitable for racing purposes only.

Six firms are exhibiting the Diesel type of motor, and while we are pleased to note this progress, yet the Diesel has its field, and one should not believe that it means the downfall of the gasoline motor.



The Problem of Getting Speed



Harpoon, the new hydroplane designed by Mr. Lord, which in her first trip made 50 miles an hour.

Things Which the Designer Is Up Against Which Are Generally Unknown to the Average Motor Boatman. The Perfection of the High Speed Motor Which Means Much to Racing.

By Frederick K. Lord.

IN these days of high-pressure living, when we sleep in a hurry and eat on the run, an indication of our nervous energy is afforded by the demand for increased speed in locomotion. In answer to this demand we have trains, automobiles and aeroplanes moving at almost incredible speeds, and incidentally breaking hundreds of necks at the same time. Now, it seems that, having exhausted their sensations on land, the speed demons have turned their attention to the water, and enthusiastically adjured the yacht designers to make them something that would "really go."

At first the wary architect immediately assumed the attitude of the turtle when in doubt, and drew his head within his shell. But after a while he stuck his head out to listen and become a lost man. Thus the unfortunate N. A., seized by the demon and securely held in his unrelenting claws, toils and burns the midnight oil, racking his brain for some wild approximation to a boat that perchance might have some of that elusive "go" quality to it.

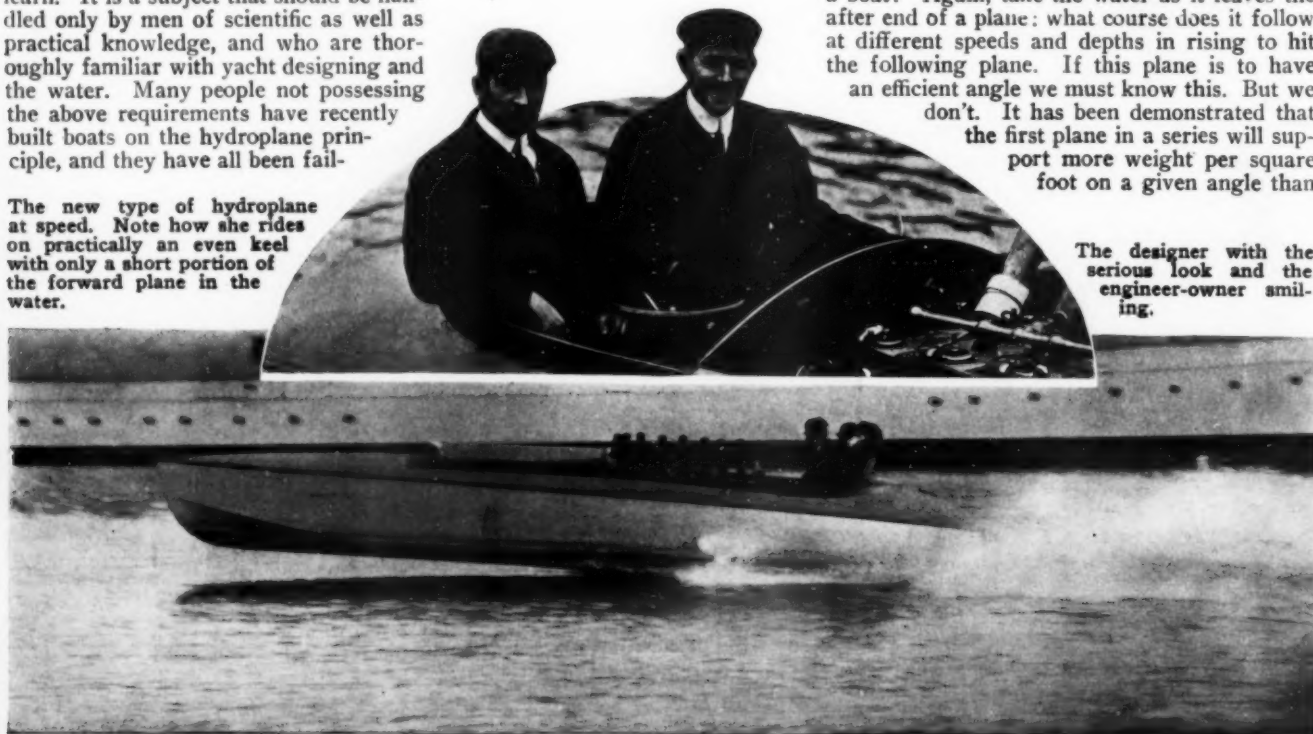
The problem of hydroplane design, is one of considerable difficulty, and there is yet very much to learn. It is a subject that should be handled only by men of scientific as well as practical knowledge, and who are thoroughly familiar with yacht designing and the water. Many people not possessing the above requirements have recently built boats on the hydroplane principle, and they have all been fail-

ures, when compared with what has been done. The only boats, barring some successful copies, which have shown any efficiency are the product of trained minds, and we must look to these men for the final solution of the problem.

Of course, the basic idea is a surface submerged at such an angle that when driven forward it shall lift the boat and drive it, to a certain degree, over the water. The surface or "plane" is the vital thing. The question then arises, What is its proper shape for efficiency? Is it flat, rounding, hollow, V-shaped, or is there any particular shape at all? Also, how about its width? The aeroplane wing has demonstrated that at various speeds there is an efficient relation between width and depth. In a hydroplane we can have a short wide plane (as in the aeroplane) running at a rather steep angle, or a long narrow plane running at a small angle. In the first case, the wetted surface is low but the angular plane resistance high, and vice versa in the second case. Thornycroft has demonstrated mathematically that maximum efficiency occurs when the resistance due to wetted surface and plane angle are equal to each other.

But how are we to figure this out in practice in a boat? Again, take the water as it leaves the after end of a plane: what course does it follow at different speeds and depths in rising to hit the following plane. If this plane is to have an efficient angle we must know this. But we don't. It has been demonstrated that the first plane in a series will support more weight per square foot on a given angle than

The new type of hydroplane at speed. Note how she rides on practically an even keel with only a short portion of the forward plane in the water.



The designer with the serious look and the engineer-owner smiling.



Harpoon running in a snow storm on the Harlem River at the rate of 50 miles an hour.

succeeding planes. But how much more? How much do we actually know of the effect of air under the planes and steps?

Some design their boats to imprison and run on air. Yet Lord Kelvin proved that a bubbly mixture of air and water caused increased frictional resistance. How about it? The faster a plane, supporting a certain weight, is driven, the less the angle necessary. What are the ratios? What is the relation between hull weight, plane surface, horsepower and speed? What do we know of the aerodynamic lift of the exposed forebody or the wind resistance of the hull? How much resistance is there to the propeller shaft stripping through the water, and in what ratio does it increase, and how much lift does it exert? How can we calculate the stability of a moving plane in order to determine necessary boat width? When a plane is heeled at a side angle, what is the lateral pressure exerted? All these questions will take years to answer definitely. The facts will come slowly as in any science; and, as in many other cases, we shall have to turn to the scientific investigator. The model towing tank and the aerodynamic laboratory will probably furnish the solution of the basic laws, and then the designer, keeping these laws in mind, will have to incorporate them in the boat and determine by actual trial the best combination of these elements for every particular size of boat: just as he does in the design of the normal types of vessels. In addition, the hydroplane boat must steer true and not skid, pound, jump or dive, and must also be dry, stable and fairly seaworthy, as small boats go. Truly a subject for any amount of study.

Realizing the difficulties, the writer decided that, as he had enough to keep him busy a lifetime on displacement boats, he would steer clear of the "hydros." But somehow he suddenly found himself amongst the "hydroists." So he accumulated what knowledge

he could on the subject and then incorporated them as best he could in a hull of his own type.

The particular demon that got me appeared last spring in the form of Mr. Wilbur H. Young, of New York, and anybody who has suffered the experience of thrusting his fair hand into Wilbur's five-fingered stilson wrench will realize at once that I was doomed. When I meekly suggested that I was not aware that any 26-footer with 180 H.P. had done much better than 42 miles on 3500 pounds, and that my ideas might be all wrong anyway, he said, "No, she should do 48 miles," and I subsided and began to toil over the board.

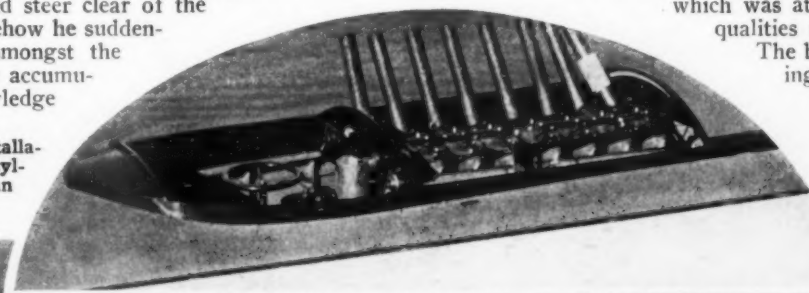
The boat was built by William Kretzer on the Harlem River, and credit is due him for putting up an excellent piece of workmanship. The motor was a $5\frac{1}{2} \times 6$, eight-cylinder Van Blerck, and as it was two years old, had been sent back to the factory to be adjusted for hydroplane work and fitted with his oiling system so successfully used in his racing engines.

When we launched her, on December 20th, the temperature was 34 degrees, with a cold wind, a condition unfavorable for obtaining maximum speed and very trying on the crew. Due to the cold, no time was wasted in preliminary running, and the boat was put over the course the minute the motor attained her revolutions, which was about 1600. Three double runs were made with and against tide, and the boat did fifty miles per hour. Under better conditions and with a chance to try other propellers she should do better, but the speed attained, which was over a very accurately measured course, is certainly very good considering the power, size and weight of the outfit.

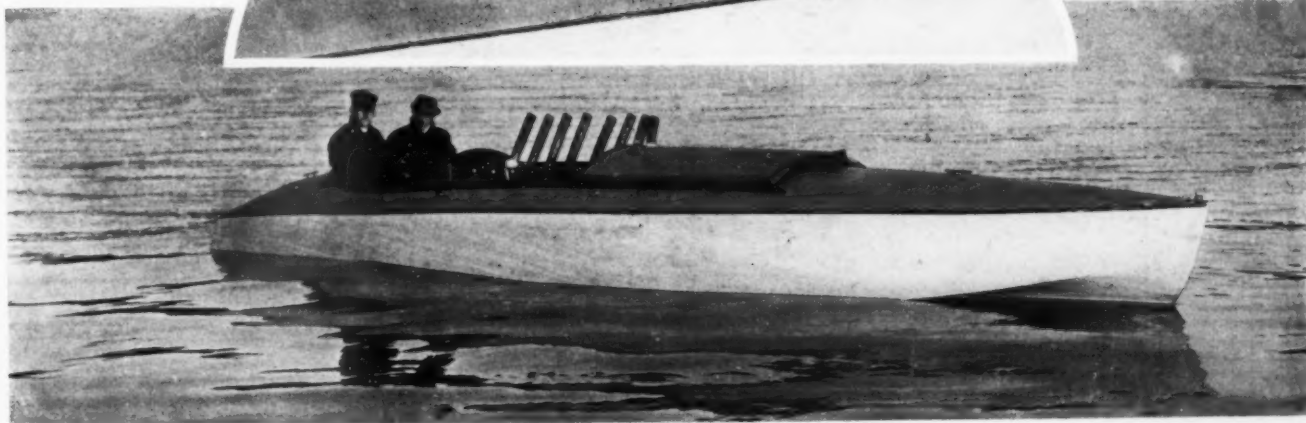
The model is one developed by the writer and in which was attempted to incorporate the qualities a hydroplane should have.

The boat appeared to be promising, and Mr. Young was pleased with her.

The cockpit and installation of the 180 h. p. 8-cylinder $5\frac{1}{2} \times 6$ -in. Van Blerck motor.



At rest, she is not unlike other hydros except perhaps of trifle more graceful lines and with a reverse sheer.



**Dreamer, a 60 x 17
Ft. Shoal - Draft,
Single Screw Boat
With 40 H.P.**

THE photographs on this page and the next are of a shoal-draft houseboat, *Dreamer*, designed by Swasey, Raymond & Page, of Boston, Mass., for Mr. Charles W. Lee of New York for general use the year round. In the summertime she will be used in the vicinity of Long Island Sound, and in the winter down the East Coast of Florida and in the many delightful waterways of that State.

The draft of the vessel has been restricted to 3 feet on account of the prevailing shoalness of the water in Florida, for it is a fact that to the boat carrying even the comparatively shoal draft of 4

Dreamer is a 60-footer, now cruising in Florida, which will be used in the summer on Long Island Sound and vicinity.

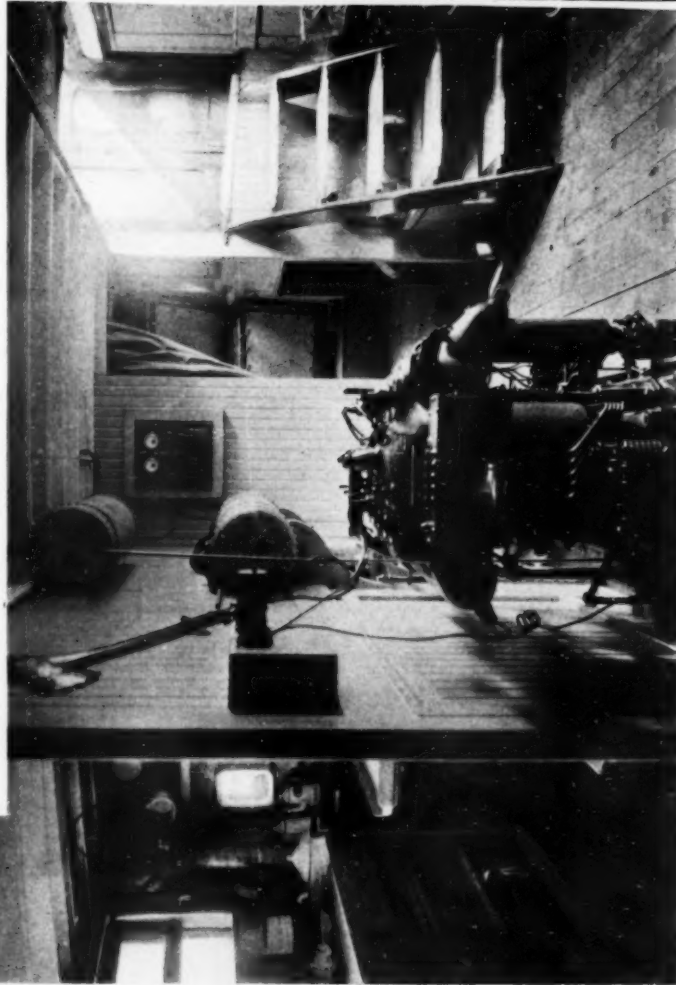
A MODERN MOTOR HOUSEBOAT

Novel Tunnel Stern Construction and a Departure from Orthodox Houseboat Appearance.

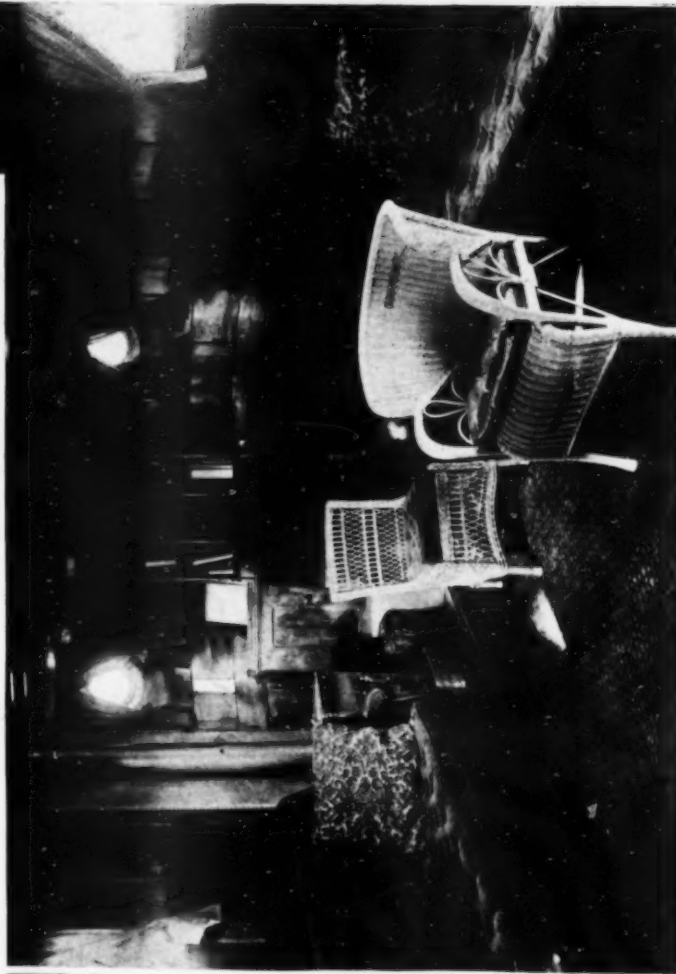
fect, for instance, many of the most beautiful spots will be denied. In spite of her shallow draft, however, the lines of Mr. Lee's boat have been so modeled that she possesses good sea-going qualities as well.

She is of the regulation tunnel stern type, in which tunnel the propeller works, and provision has been made so that in case of grounding—and, considering the deviations and uncertainties of

the channels in Florida, this might be put, when she grounds, the propeller will es-



The completely equipped galley is connected with the saloon forward by a central passage. The 40 h. p. Sterling motor gives the boat an eight-mile speed.



The saloon or living-room is an unusually cheery place, being well lighted by ports and windows and being equipped with piano and open grate.

cape injury. The freeboard has been kept higher than in a great many boats of this type, and the house being higher too, it gives the vessel a more shippy appearance. Instead of using circular ports, the windows are similar to those of a house, and these in conjunction with the skylights and ventilating cowls will give good light and ventilation in all compartments.

As the boat has been intended to live upon, the rooms below were all made large and roomy. The cabin is in the forward part of the boat, which is generally the most pleasant part, and is to be used as a living-room. It is equipped with sideboard, tables, chairs and lounges, and is a very pleasant place to sit in.



The upper deck with steering location forward, giving an idea of this deck's roominess.

In addition to this regular equipment, a piano has been installed, and an open grate to make things cheery when there is a chill in the air. A center line passage leads from the cabin aft to the engine-room and galley. Opening off this passageway are two staterooms on one side and stateroom with

adjoining bathroom opposite. These staterooms, which will accommodate six persons, are equipped with extension transoms, bureaus and locker space, and the bathroom is completely equipped with toilet, wash basin, and tub with shower. The power plant consists of a 40-h.p. Sterling, giving a speed of over 8 miles.

An Alcohol Engine of 100 H. P.

An Interesting Marine Engine of Six Cylinders Recently Built in Germany. A Motor Which Starts on Gasoline but Soon Picks Up Its Cycle on Alcohol.

THE cylinders of this German engine appear as twin-casts, and besides the two running jackets, the cylinder-cast comprises all valve-chambers, the canals for introducing the working air and conducting away the burnt charge, and the cooling-water spaces. On the exhaust side, the water-jacket is closed with a capacious cover, easily removable for the purpose of cleaning the spaces. The valve spindles work in bronze bushings, drilled for admitting from without, oil, or, in the case of their seizing, paraffin.

Turning to the crankhouse, this is wholly closed with the triple object of protecting the propulsive machinery from external influences, of preventing the lubricant from splashing about, and of providing a reservoir or sump for fresh lubricating oil. The crankshaft possesses four sets of bearings, which are water-cooled, and mounted on through-trusses of rectangular cross-section, prolonged outwardly on both sides beyond the crank-housing, and thus constituting the supports for the entire engine. These arms rest on planed angle-bars that also carry the reversing mechanism. There are large inspection-plates on each side of the crankcase's upper section.

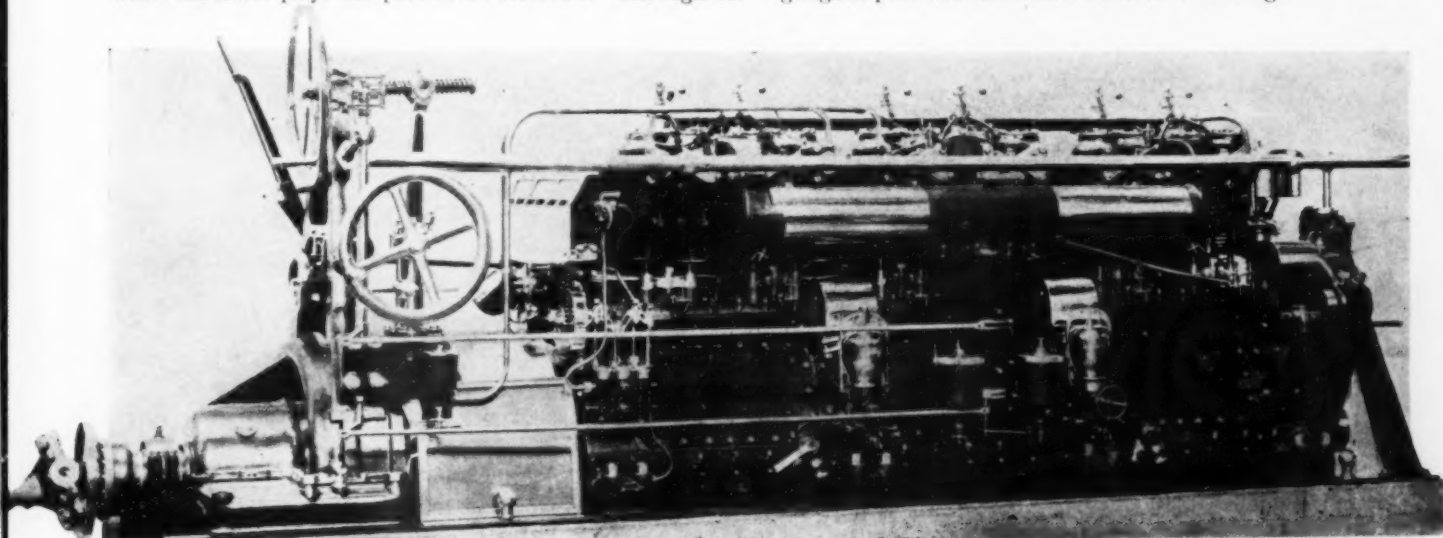
The four hollow arms of the crankcase are partitioned off into two separate chambers, of which the upper serves as cooling-water lead for the main bearing of the crankshaft, while the lower plays the part of oil-reservoir. Through col-

lecting leads the corresponding chambers stand in connection with each other. In the arms there is also an oil-filler with sieve, likewise an oil-gauge, as well as an oil cleanser for lubricant that has already been forced through the engine.

At the side of the crank-housing's top, above the large lateral openings, is a separate and distinct housing for the camshaft, which primarily operates the laterally-mounted valves. The shaft obtains its motion through the agency of spur-wheels with a 1:2-gear, brought into engagement by an intermediate wheel. It belongs to the three-section category, and emerges from its housing where the coupling-pieces are constructed as driving cranks for the water-pumps. From the after end of the camshaft a tachometer for registering the r.p.m. is driven through a chain. From here, too, a high-tension distributor is driven.

The pumps themselves are attached to the crankcase, and respectively circulate the cooling-water and drain the bilge.

As to the propulsive machinery proper, the pistons are casts having each four self-expanding rings of the same composition. The gudgeon-pins have been conically inset, and equipped with a protecting plate of bronze, which, if the cone worked loose, would save the cylinder's working-surface from damage. The connecting-rods are of forged steel, and severally embrace the gudgeon-pins with an undivided bronze bushing.



Six cylinder, 100 h. p. German alcohol marine engine with air starting attachment and electric ignition.

Present Bore & Stroke Tendencies.

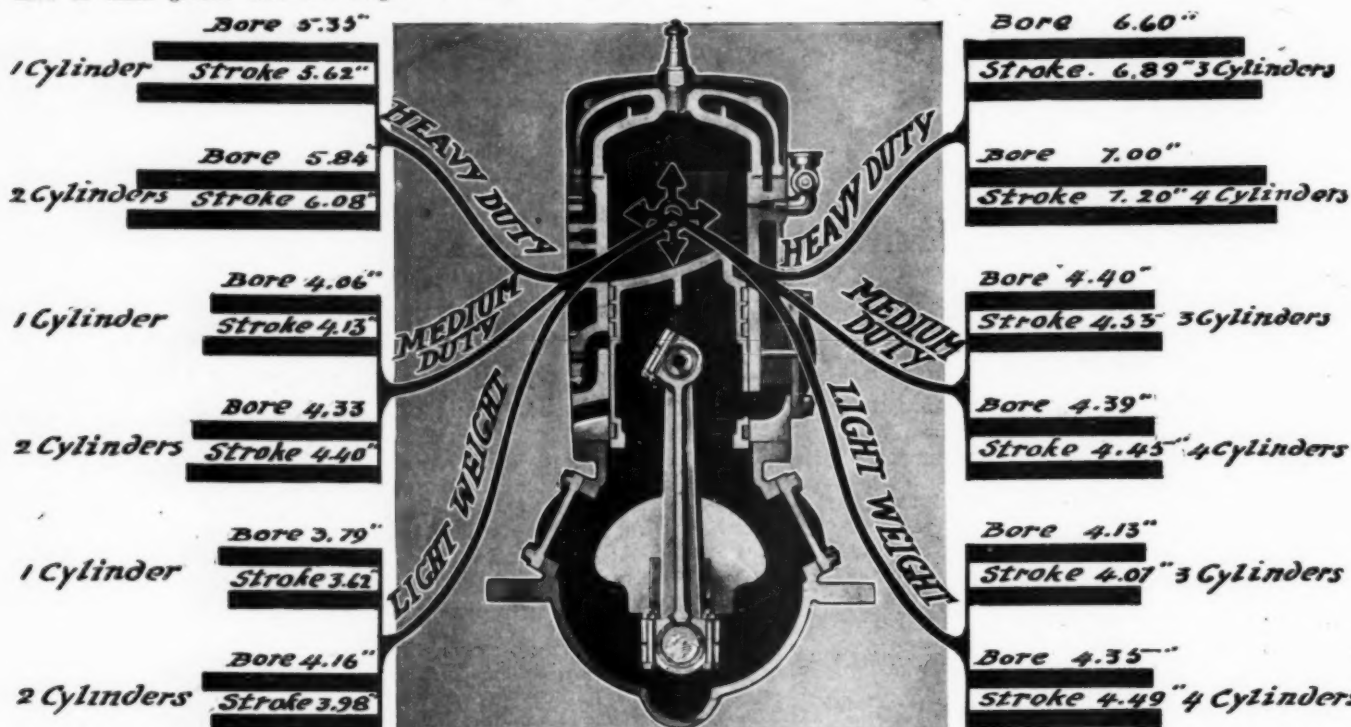
How Standard Practice Varies in the Heavy Duty, Medium Duty and Light-Weight Models.
The Average Dimensions of Bore and Stroke of Each Type and Cycle.

AN interesting feature brought out by the data shown below is the relative size of the bore and stroke of the heavy duty motors manufactured to-day compared with the medium duty, and those in turn compared with the light-weight motor. This shows very well, indeed, why, for a given horsepower, the heavy duty motor must have so much greater bore and longer

stroke than the light-weight motor of the same power. Carrying this reasoning along still further, it shows why the automobile motor is of even smaller dimensions than even the light-weight marine engine.

The relation of bore and stroke also changes as we pass from the heavy duty, through the medium to the light-weight machines. In the first mentioned, we note the stroke is invariably greater than the bore, while in the one, two, and three-cylinder, two-cycle light-weight motors, we find the bore greater than the stroke. In four-cycle practice the bore is seldom the larger.

2 CYCLE MOTORS



4 CYCLE MOTORS

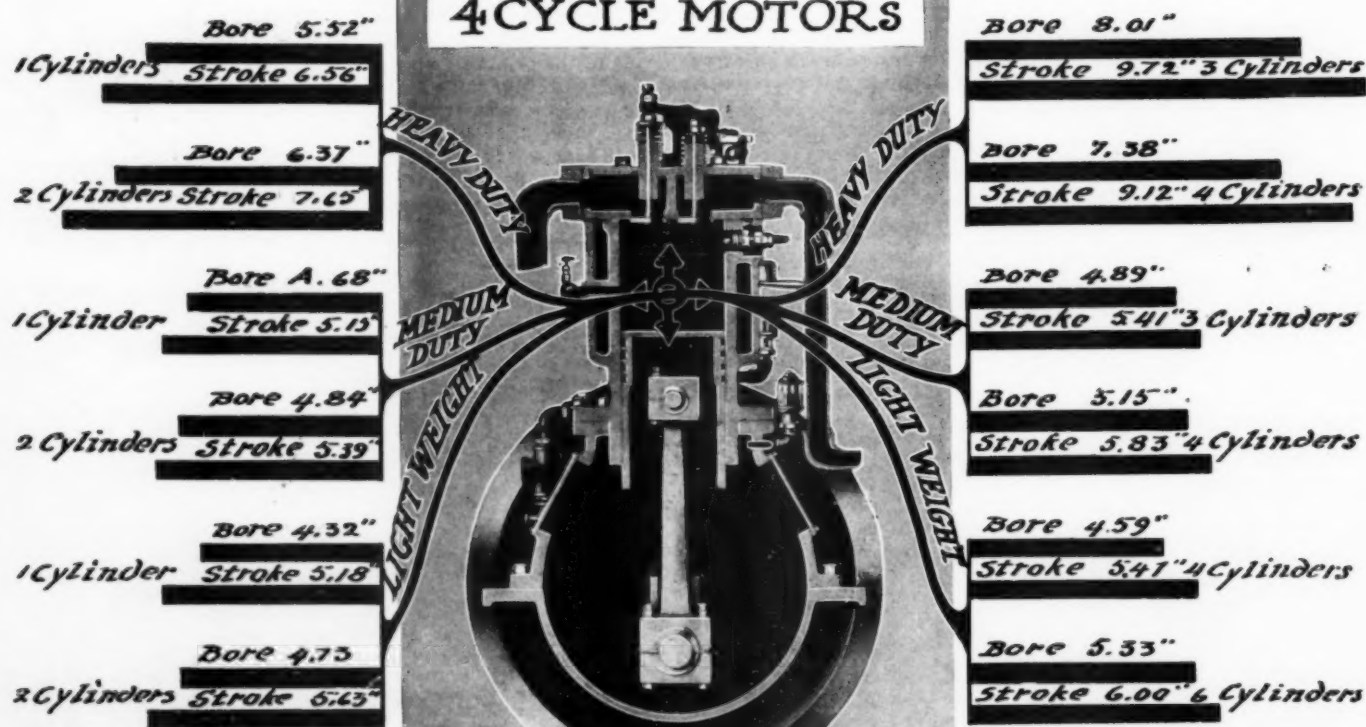


Chart showing the average of American standard thousand models were con-

practice in marine engine manufacture. Nearly two sidered in compiling this data.

Air Propulsion in France.

The Utility of the Air Propeller as Applied to French Gliders. High Speed and Ease of Operation in Shallow, Weedy Waterways Among the Advantages Claimed for Them.

ALTHOUGH devoted primarily to air vessels, the Aeronautical Salon held recently in Paris had something of interest to the marine motorist as well. Gliding boats formed an interesting section of the exhibit. The Lambert Co., which has been doing quite an important business in gliding boats with aerial propellers, had two craft on view. One of them, Flyer, with which, it is said, M. Paul Tissandier set up a world's record for a kilometer at approximately 60 miles per hour, is powered with a 200 h.p. 18-cylinder Gnome motor, driving a double chain. The other, a slightly smaller boat, is driven by a Gobron 40 h.p. motor. In this, Tissandier has taken long journeys up the rivers Seine and Rhone. A number of the bigger boats of this type have been sold in South America, where shifting river bottoms make navigation with ordinary boats difficult.

The Nieuport (above) and Tellier gliding boats at the Paris Aero show.

Nieuport had two gliders with aerial propulsion on exhibition; Bleriot had one of his models, and Borel showed several gliders with accommodations for passengers.

An interesting glider with four-bladed propeller and motor set well aft.

The Borel gliding boat. Here the engine is placed practically amidships with shaft running aft and terminating under the deck. Note the two rudders.

Part of the exhibit of boats with aerial propellers. At the right in the circle is Tissandier's Flyer which is said to have set up the world's record for the kilometer at roughly 60 miles per hour.

An Air-Propelled Barge.



Mechanics fitting up the engine. Observe the propeller can be raised or lowered.

CANAL BARGES are among the very few things which have so far escaped modernization, and now the first step has been made with them. On the Surrey Canal, England, experimental trials of an air-propelled barge were made recently, and, although the motor used was an old one and not tuned up to the test, the trial showed that aerial propulsion for light-draft barges has promising possibilities. The makers of this device, Messrs. L. Blin Desblads Co., of Westminster, do not claim that their method is superior to under-water propulsion where there is plenty of draft, but they do advance the opinion that air-propulsion is better than driving a screw propeller in a tunnel.

The power plant was worked out as follows



The 8-foot propeller, and H. S. Pupin, inventor of the system.

serve the clever method by which the propeller can be raised and the chains yet kept taut.

for this test: An old 16 h.p., four-cylinder Decauville motor was rigged to an aerial propeller 8 feet 3 inches in diameter with about 6 feet 2 inches pitch. The engine turned over at 900 r.p.m., but the propeller, by a series of chain

drives, was made to turn at only 700 r.p.m., it being believed that better results would be attained at this speed than at a faster rate. The feature of the installation which had the most interest was the method of raising and lowering the propeller. This was accomplished by having two chain drives arranged in elbow fashion, the lay shaft being mounted in a quadrant to one side. When the propeller was lowered the lay shaft was pushed along the quadrant, thus keeping the chains at constant tension.

Suggestions for Handicapping.

What One Racing Man Thinks of the Antiquated Rules Now In Use. Correcting the Trial Performance System So That Jockeying Will Be Eliminated.

By William Glader.

HAVING read an article in your recent number on Rules for Handicapping Motor Boats, I was amused at the suggestion of the lemon game and other games, given to your St. Charles correspondent. You are right, however, when you say you are ready to throw up your hands in the matter, as there are no known rules which work out satisfactorily. This is principally due to hanging on to some of the original silly motor boat rules, such as restricting the finish, allowing a 2% of time, barring a timepiece, and allowing points. These rules destroy the features of a race. To have a real race you must have an open finish and you must offer a premium for

a beaten boat to push the winner to the last extreme, without incurring a penalty. Therefore, I wish to offer a set of rules intended for motor boat clubs wishing to give series races, which will work out to the satisfaction of boat owners and give excellent sport and excitement:

RULES.

A motor boat owner wishing to engage in races must give to the regatta committee, in writing, the best time his boat can make over the course. This given time shall be known as *trial time*.

All races shall be series (or heat) races. Best two in three. A boat winning two heats

wins the race. In case of a split in heats, the two boats having won a heat shall run off for the race.

No official time shall be taken of any boat in the race, except the boat crossing the line first. In case of disqualification, the next boat shall be declared winner of the heat with notation (no time taken).

A boat winning a heat in faster time than its *trial time* shall be penalized an amount equal to such excess, but not disqualified from the heat for such excess speed. Its new time, plus the penalty, shall stand as its best time thereafter and shall be its handicap time in its next race or heat.

Every boat finishing the heat after the first

(Continued on page 44)

PRIZE CONTEST

IN QUESTIONS & ANSWERS

Advantages of Bilge Keels.

THE PRIZE CONTEST—Answers to the First Question in the December Issue.

Bilge Keels for the Moderate Size Cruiser.

The Prize Winning Answer.

BILGE keels are fin-like pieces of wood or metal fitted on each side of a vessel at the turn of the bilge, running fore and aft for about one-half the overall length of the hull and terminating equally distant fore and aft of the amidship section.

Their purpose is to reduce the rolling of a vessel while at the same time offering the least possible resistance to its forward motion, and while they are fitted extensively on large ocean-going ships they are seldom seen on the moderate-sized cruiser or yacht. Yet they would be a decided advantage on a small boat of fine lines and rather semi-circular sections, especially if it is to be used on unprotected waters and for open sea work.

The length of the bilge keels should be about one-half the length of the boat and the width from four to eight inches for about three-quarters of their length and neatly tapered at the ends about as shown in the accompanying sketch. To obtain the least resistance to the forward motion of the boat, the line of the intersection of the centerline of the bilge keels with the hull planking should be parallel to the mean trim line when the boat is in cruising condition, with all weights on board.

The athwartship location and width of the bilge keels depend largely upon the shape of the midship section. In Fig. No. 1 of the accompanying sketch let A B represent the mean water line, C D the half-width of the section over the planking, and E F a line parallel to the mean waterline and tangent to the planking where it intersects the keel. Draw a line through the intersections of A B with the centerline of the section C D and E F, and where this line intersects the hull at G, erect the bilge keel at right angles to the hull at this point. Another method is to find the central point on the turn of the bilge at the midship section by actual measurement and erect the bilge keel at right angles to the point thus found.

As stated above, bilge keels for small and moderate-sized boats vary in width from four to eight inches, depending upon the size of the boat, but it should be borne in mind that they should not be so wide as to project beyond the side of the boat or below the keel as they would be in danger of damage when tying up alongside a dock or in case the boat runs aground.

There are various methods of fastening the bilge keels to the planking. For large cruisers a tee bar can be bolted or riveted through the ribs or a wooden keel can be fitted as shown in Fig. No. 1. R. G. SUGDEN, Hampton, Va.

QUESTIONS FOR THE APRIL ISSUE.

1—Discuss vibration in a boat and suggest a means for correcting or lessening it.

Suggested by D. G. Stanbrough, Norfolk, Va.

2—Explain with drawings the best method of replacing an injured plank in a boat.

Suggested by A. D. Sandry, Cleveland, Ohio.

3—What things did your experience of 1913 show should be attended to in fitting out this year that were omitted last spring.

Suggested by A. P. B., Boston, Mass.

RULES FOR THE CONTEST.

Answers to these questions, addressed to the Editor of MoToR Boating, 119 West 40th St., New York, must be (a) in our hands on or before February 25, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses. (The name will be withheld and initials or a pseudonym used if this is desired.) Questions for the next contest should reach us on or before the 25th of February.

The prizes are: For each of the best answers to the questions above, any article advertised in the current issue of MoToR Boating, of which the advertised price does not exceed \$25, or a credit of \$25 on any article advertised in the current issue of MoToR Boating, which sells for more than that amount. (There are three prizes, one for each question, and a contestant need send in an answer to but one if he does not care to answer all.)

For each of the questions selected for use in the next contest, any article advertised in this issue of MoToR Boating, of which the advertised price does not exceed \$5, or a credit of \$5 on any article advertised in this issue of MoToR Boating, which sells for more than that amount.

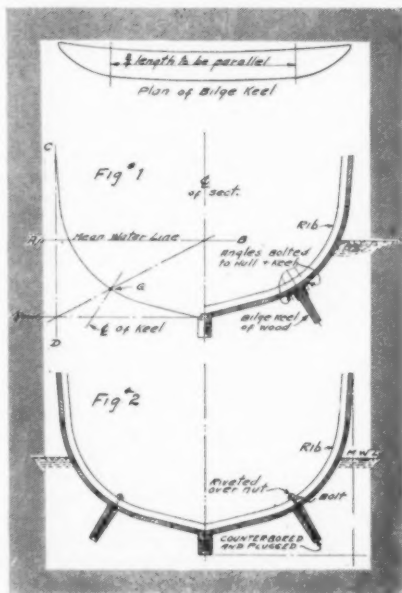
Adapted on Ocean Going Large Boats.

IN PRINCIPLE, the bilge keel is exactly what its name implies, a longitudinal keel projecting just below the turn of the bilge at right angles with the planking, and its function is to present an obstacle to the rolling of the vessel's hull, counteracting somewhat both the unduly deep and protracted rolling of the deep-draft, easy-lined hull and the shorter roll and violent recovery of the shallow, hard-bilged model.

The action of the bilge keel is the same on vessels of all sizes, the smallest motor boat being as favorably affected by their adoption as the heaviest battleship or the longest ocean liner. It need hardly be said that they must be placed exactly parallel with the stream lines which leave the vessel's underbody in directions governed by the shape and proportions of the individual model. Excessive resistance will otherwise result, and the vessel's speed will be seriously diminished. The accurate placing of bilge keels is not an easy problem, and the best naval architects give this matter careful consideration. Experiments with a small model are probably the surest guide, although an intelligent study of the boat's lines will go far toward indicating the correct location.

On a motor cruiser of say 35 feet overall, a length of one-half that figure, or 17 feet 6 inches, would be a good proportion for the bilge keels. These should be placed about amidships, allowing the same distance fore and aft of their position. They should project beyond the boat's planking about 7 inches at the widest part, narrowing down fore and aft to about 3½ inches in width and with both ends well rounded over to prevent their catching on lines or other obstructions. A thickness of 2½ inches would be about right where the keel joins the hull, tapering to 1¼ inches on the outer face, which latter should be protected by half-oval galvanized iron the whole length, for the bilge keels must withstand much strain and abuse in case the boat should ever take the ground. The keels should fasten on outside of the planking, otherwise a heavy shock would probably open up the seams along the keel and might result in the loss of the vessel. One-half inch galvanized bolts, with nuts and washers inside the hull should be used for fastenings. These should not go through the vessel's timbers, as of course such large holes would cut them away to a dangerous extent. A heavy bilge stringer of oak should be notched over every frame and fitted against the planking inside the hull the entire length of the bilge keels.

ALLAN O. GOULD, Portland, Me.



Method of locating and fitting bilge keels suggested by Mr. Sugden.

When you send in your answers you must state what you will take for a prize, should you win one.

Spark and Throttle Controls.

The Proper and Best Installation of These When the Motor Is Located Some Distance Away. Several Different Methods to Suit the Many Requirements of the Average Boat.

THE PRIZE CONTEST—Answers to the Second Question in the December Issue.

A Complete System.

THERE is perhaps no part of a motor boat equipment receiving so much attention from designers and manufacturers just now as the departments given over to controls and controlling accessories. Since the marine motor has attained to its present-day state of perfection, requiring but little attention, motor boatmen have seen fit to place the power plant in many different "out of the way" places. It may be that the motor is housed under a neatly finished box, beneath a water-tight hood, or below the deck, and yet at some little distance from the operator's seat. The automobile traffic has brought forth and evolved to perfection unlimited accessories for operating throttle and

the device when completed will be very simple, as shown by the reverse gear control sketches. At any rate, it is worth your while at this season of the year to start out and "dope up" some sort of simple controlling device to use in your craft next summer. In designing the apparatus, however, aim to make the thing as simple as you can, securing the desired movements with as little lost motion as possible.

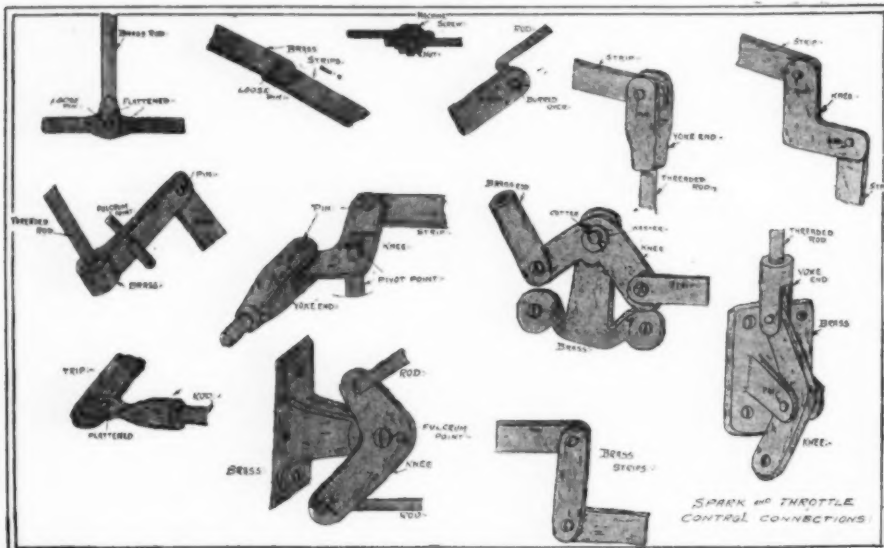
C. E. BRADLEY, Fall River, Mass.

Deck Controls.

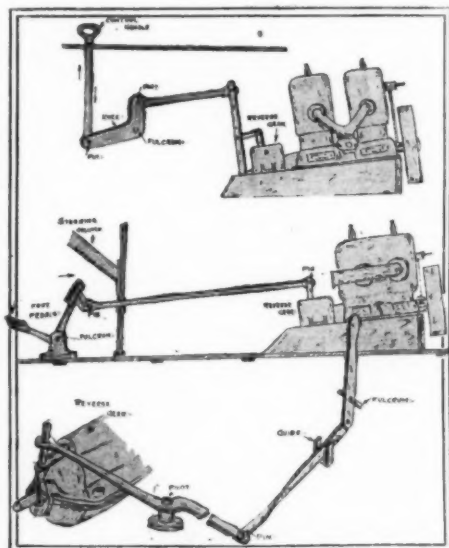
IN the drawings herewith two modern types of deck controls are shown. One with the auto steering wheel having ratchet levers attached which operate the push rods to the car-

There is a large variety of bell cranks, ratchet levers, universal joints and ball-and-socket joints on the market that may be obtained, which will be found satisfactory for practically every individual case. The main features required are solidity and the elimination as far as possible of lost motion. Bell cranks should be substantially bolted to bulkheads or other suitable support and if sheaves are used, they should be large and grooved to receive the wire.

Bowden wire, which is extensively used on autos and is a wire run through flexible tubing and packed in grease, is an excellent article for controls as it will take any number of quick turns without kinking and a push at one



Complete details and assembly for spark, throttle and gear controls designed by Mr. Bradley.



timer levers, many of which are now used to advantage in up-to-date craft.

Numerous small boats have a "dashboard" or bulkhead control arrangement similar in design to those of the modern automobile. Others are equipped with auto steering devices having spark and throttle levers on a segment within or below the wheel, just the same as the modern car. These small articles of equipment are, however, not always available when wanted, and it often occurs when installing an outfit that just the fitting you must require to complete your device is not to be had in the local market. Such being the case, small diameter brass rods flattened and drilled, brass strips bent or filed to various irregular shapes, threaded tubing, etc., can all be worked up to connect with loose joints and fill in nicely.

The accompanying sketches show how some of these standard materials can be made into simple yet efficient and inexpensive spark and throttle control connections.

In the case of reverse gear controls, the outside designed and manufactured accessories are not quite so far advanced. Hence it is up to the boat owner himself to work out and rig up a scheme that will meet his requirements. Often times fittings similar to those used for the engine controls, only on a much larger and heavier scale will do, and in many cases

bureter and timer, the direction of these push rods being changed by means of heavy bell cranks.

The reverse gear is operated by a pneumatic clutch control which consists of a cylinder having two pistons similar to a double acting pump, these pistons working on compressed air which may be supplied from the whistle tank. The air is conveyed by means of copper tubing to a valve located on the bulkhead handy to the steering wheel. A small lever admits the air pressure to either end of the cylinder, causing the pistons to move forward or aft, and this power is transmitted to the reverse gear by means of a lever attachment.

In the other method the ordinary steering wheel is used with the controls attached to the bulkhead and the reverse lever operated by means of an auto steering wheel which is fitted with a sprocket wheel at the base working a sprocket chain and push rods or wire rope.

These types actuating the reverse eliminate the necessity of cutting a slot in the cockpit floor for the reverse lever, an undesirable feature in cruisers as it allows quantities of water to work below and this lever sticking up through the deck is usually very much in the way in boats with self-bailing cockpits or of the bridge deck type.

end will deliver the same power at the other regardless of the number of turns.

H. W. LOWEREE, 73 Maiden Lane, N. Y. C.

Remote Controls.

THE installation illustrated was designed for and installed on a cruiser. This equipment, together with a rear starter, places the entire control of the boat at the steering station. The various rods, bell-cranks, forked ends, etc., with the exception of the vertical shaft, were made from discarded automobile parts. The installation has stood the test of 1,800 miles cruising during the past season without a moment's attention. In addition to the controls illustrated, a flexible wire is brought from the carburetor flushing pin to the steering station while for winter service it will be found that starting can be made easier by bringing a lead from the butterfly valve in the air intake, thus permitting a rich charge being drawn into the cylinders.

The reverse gear was selected with a view to the installation illustrated and as shown has side lever control. If a vertical lever gear is used, a bell crank can be installed in a horizontal plane and linked to the gear operating lever and vertical shaft, to transmit the motion. It

will be noted that this installation relieves the cockpit of the unsightly reverse gear lever which is always in the way and is a constant source of danger in rough weather. The vertical shaft installation permits of a water-tight cockpit.

In the installation of the timer and throttle controls care must be taken to make all parts a neat fit to eliminate lost motion. The most satisfactory results will be obtained by spring loading the controls with a light coil spring so set as to be in tension under all conditions of lever setting.

D. G. STANBOUGH, Norfolk, Va.

An Open Boat Installation.

THE jack shaft (Fig. 1) may be placed either fore or aft of the gear, as the conditions permit, and the shaft standard (A. A.) may be made to fasten either on top or sides of engine bed timbers or gear base.

floor should extend to a point under the wheel and may be connected to gear lever or deck by means of a second rod and jack shaft or bell crank. The spark and throttle controls may be connected in the same manner.

VERN MANCHESTER, Fountain, Michigan.

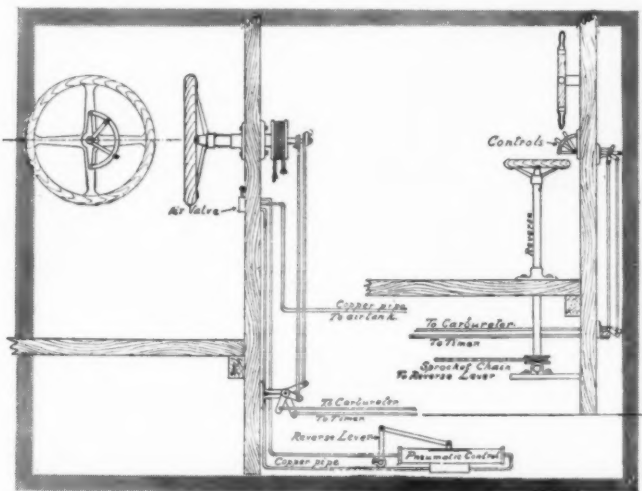
A Cable Control.

IN designing means for controlling the spark and throttle at some distant point, all unnecessary turns and bends in the connecting members should be avoided, while in reverse gear control, strength and rigidity are the principal consideration. The accompanying rough sketches show means for accomplishing the results sought.

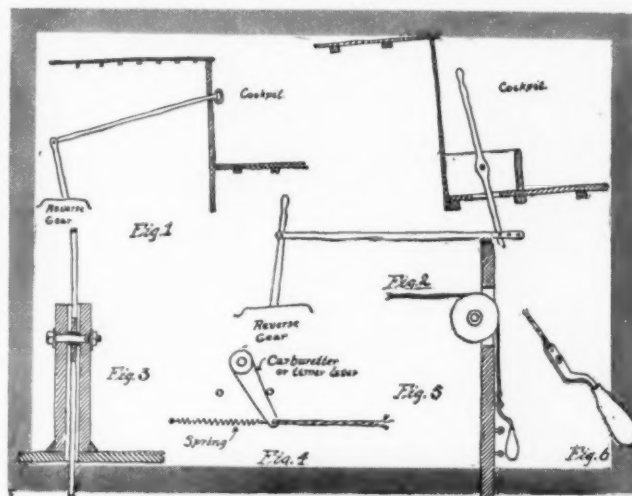
Fig. 1 is self-explanatory and is probably familiar to many. Fig. 2 is a method which will be found satisfactory whether the reverse gear is fore or aft the controlling point. A piece of

be noted that a bushing made from a piece of pipe is slipped over the bolt for the lever to turn on. By this construction the housing may be placed quite close to the lever without danger of binding, as the bushing will ensure clearance. The size of the bushing should be determined of course before the lever is pierced. The bolt, nut and washer should be galvanized. If the housing is properly fitted and fillets used in the corners this scheme will be found quite satisfactory in a self-bailing cockpit.

The spark and gas may be controlled at a considerable distance from the motor by means of some small bronze cable. Fig. 4 shows a lever, which may be either that of the timer or carburetor, and the cable attached. A brass spring is attached in the manner shown. This should be so arranged as to tend to pull the lever toward the slow position as an accident to the control would then manifest itself by slowing the engine rather than by speeding it up.



Mr. Loweree's neat and effective controls.



A flexible wire control suggested by J. F. C.

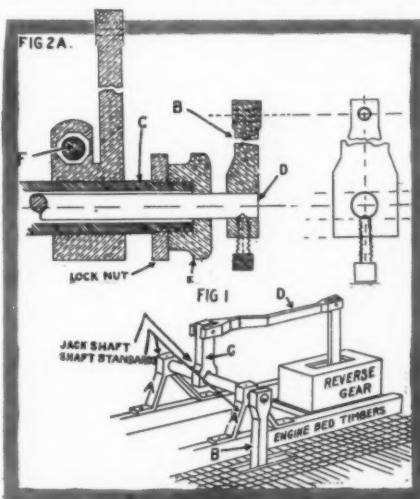
Each lever (B. C.) should be of the same length, i. e., the distance between center of each hole should be one-half the distance from hole in gear lever to point below floor, where connecting rod is fastened on. The length of connecting rod (D) depends upon distance between lever (C) and gear lever. The control lever, no matter how far placed from reverse gear, may be connected to jack shaft lever (B) by means of a connecting rod; a piece of hollow wrought steel or iron tubing, flattened and drilled at both ends, is best, as it will not bend or kick so easily.

Fig. 2A shows a convenient means of connecting spark and throttle levers. The hollow tube and solid rod C and D lie under the floor and extend from right below one side of motor to a place beneath or near operator's seat. Two levers (A and B) are placed on both ends of the rod and tube and are connected to spark and throttle levers or motor, by means of connecting rods and bell cranks. The two levers at operator's end of line may be connected to either bulkhead control levers or auto steering wheel with center motor control levers by means of connecting rods and bell cranks if necessary.

The tube (C) should have an easy working but firm bearing every four feet, and the pipe cap (E) should fit moderately over rod (D). The lever (A) is a split lever and is clamped to tube (C) by means of bolt (F) and either lever may be set at any angle or made in any length to suit the requirements.

The same device just explained may be used on any small cruiser with a one-man control. The reverse gear connecting rod under the

wrought iron, say $\frac{3}{8} \times 1\frac{1}{2}$ may be used for the lever and had best be pierced hot for the pivot bushing, as this method will not remove stock and cause weakness as will drilling. After drilling a bolt hole in the end, the proper dis-



Controls placed under the flooring in Mr. Manchester's design.

tance from the center for the connector, the lever should be galvanized.

Fig. 3 is a section through the wood housing at the point where the lever is pivoted. It will

Care should be taken to provide suitable stops to keep the movement of the lever within limits in case such stops are not already there. Fig. 5 shows a very simple means for taking care of the other end of the cable. A piece of sheet brass is formed up as in Fig. 6. The two holes are drilled and a wood handle is attached. The cable is attached as shown, after being led over the grooved pulley. A row of round head brass screws are arranged in line with the pulley, and control is effected by slipping the brass piece over the different screw heads. In leading the cable to the engine, deep, grooved pulleys should be used wherever a turn is necessary. A more finished appearance may be acquired by using one of the standard spark and throttle controls now on the market. In that case it would be necessary to attach a spring to each hand lever in much the same manner as the spring shown in Fig. 4 to counterbalance the effect of the latter spring. It will be seen that the springs prevent all lost motion and insure an even control.

J. F. C.

MoToR Boating's Prize Contest is proving of the greatest assistance and value to thousands and thousands of motor boatmen every month, and while it is the best thing of its kind published anywhere in the world we want to make it better each month. One does not have to be a talented writer or artist to compete or even win a prize, and we want you to feel that you have just as good a chance to win one of the many prizes, as some of those who have won dozens of them within the last few years.—EDITOR.

Getting the Motor Aboard.

Means Whereby the Work of Raising a Heavy Motor is Made Light and Easy. The Equipment Necessary and Several Ways of Rigging It Up.

THE PRIZE CONTEST—Answers to the Third Question in the December Issue.

Using the Chain Hoist.

IN a small cruiser when the motor weighs not over two or three hundred pounds with the fly-wheel removed, the motor is easily on board by sliding it along a plank. Two or three good men will handle this motor easily. It is the larger motor that requires a hoisting rig. Boat yards have either a boom derrick or skew legs at their command, but the amateur builder must rig his own hoist or part with quite some of his hard-earned cash, to hire a rigging gang for the job.

If there are a couple of good trees or a heavy timber above to fasten the tackle to, you will not have to rig very much. If nothing substantial is available, rig two skew poles to form skew legs alongside the boat, so that the motor may be hoisted clear and lowered on its foundation. The poles should be at least three times as long as the boat is high. Fasten them securely at the top, allowing a spread of about one-third their length, dig a hole for the foot of each, to prevent their slipping. Use two long guys, having slightly more spread than the poles and fasten them in such a manner that they may be slackened without danger of slipping. Three times around a tree or post accomplishes this nicely. One guy tied straight back is not as good, but it will answer in some cases. A slight lean towards the boat should be allowed the skew poles.

A chain around both poles makes the best sling, as it will not break, but a rope sling can be used without trouble by placing a rod through the hook on the tackle to hold it.

A chain block, if available, will be the easiest hoist to handle. If necessary, a man can exert a pulling force equal to his own weight, the block automatically holding the load which is sufficient to raise the capacity of the block. If pulley blocks are used, rig a four-fold tackle, and for a heavy motor, hook a luff tackle to the fall line and put a match block at the foot of one of the poles. By hooking on a three-fold luff tackle you increase the pull on the fall line of the hoisting tackle three times. The pull on the fall line is increased in direct proportion to the number of strands leading from the movable block. With two hundred pounds' pull on the fall line of a four-fold tackle, you could lift 800 pounds.

The safe working load for a new $\frac{3}{4}$ -inch diameter hemp rope is 992 pounds, and a four-fold tackle is safe with four times that weight. The strength of old rope is an unknown quantity.

Unbolt the motor from the skids and string it with two ropes tied close, putting one around each way, and taking a turn on the hooks. This will prevent slipping and give twice the strength of one rope.

When all is ready and a good crew present, hoist away until the motor is over the boat. If

the motor is in the cockpit or the cabin not yet on, lower away until the motor rests on its foundation. It would be advantageous to put the motor aboard before building the cabin, but if this is not convenient, a tackle fastened forward inside the boat will pull the motor in nicely as it is being lowered. Let one man superintend the job, and keep a lookout that things go right.

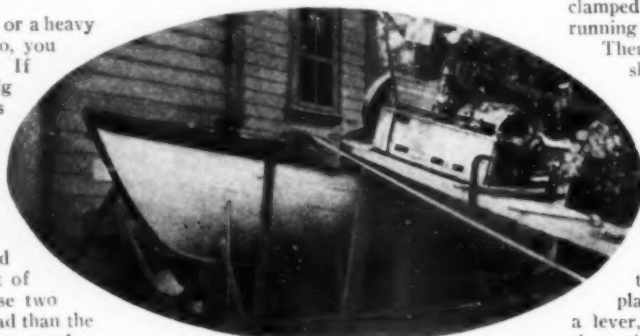
If the boat is in the water, this rig can be set up on the dock and the same general plan

were obtained and placed up against the coaming, as seen in the photograph, thus forming a long runway. A heavy block and tackle were then rigged up, and a smaller tackle on the end of the heavy rope made a very powerful combination for hauling the engine up the runway. The fixed end of the small tackle was made fast to a tree-trunk, and the fixed block of the heavy tackle was fastened around a stanchion in the shed back of the boat.

With very little effort the engine was hauled up the runway, a heavy block being continually clamped on behind it in order to prevent it running away in case the rope should break.

Then two heavy timbers were laid athwart-ship across the coaming and the engine hauled onto these, thus bringing it directly over the center of the cockpit. Heavy blocks were then piled up under the engine, and it was lowered onto the cockpit floor by prying out these blocks one at a time. The crating around the engine bed was then removed, and a couple of long timbers extending into the cabin were shoved under the bed plate. Using a long, heavy oak timber as a lever, the engine was slowly pushed along these timbers into the cabin, the cabin beams being cleared by half an inch. When directly over the engine bed, the long timbers were removed, after blocking up under the bed plate; then the engine was lowered onto its bed, by removing these blocks one at a time and by the use of the oak lever. About one day was taken for this work and no accidents occurred, not even the varnish on the cockpit interior being scratched. It is unnecessary to say, however, that a job of this kind requires great care and patience.

H. H. PARKER, Oakland, Cal.



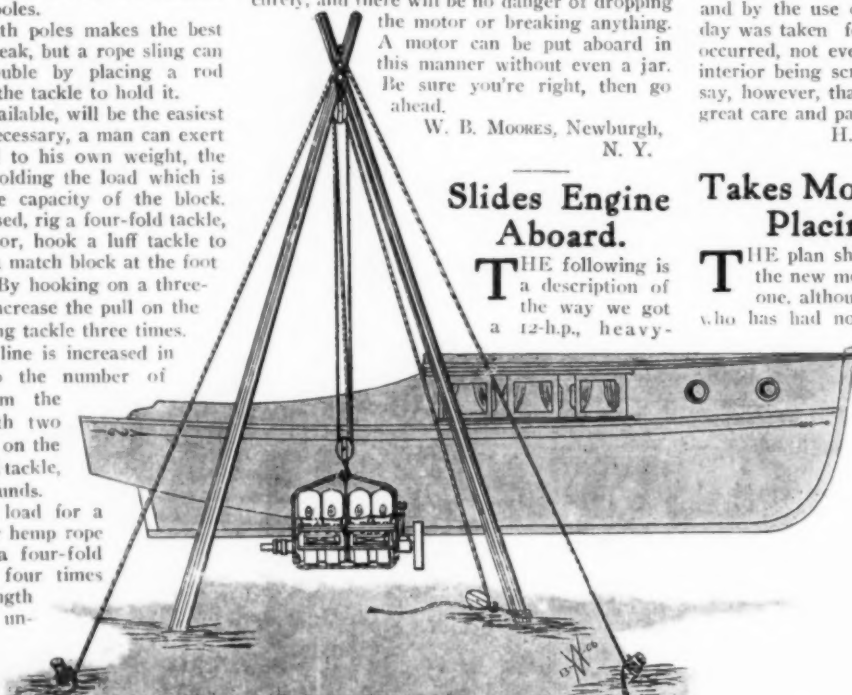
Mr. Parker's method of sliding the new motor aboard.

carried out. A little care to have strong timber, good lines, and make everything fast securely, and there will be no danger of dropping the motor or breaking anything. A motor can be put aboard in this manner without even a jar. Be sure you're right, then go ahead.

W. B. MOORES, Newburgh, N. Y.

Slides Engine Aboard.

THE following is a description of the way we got a 12-h.p., heavy-



Simple hoisting outfit suggested by Mr. Moores.

duty, Buffalo engine, weighing 1,400 pounds, into a 28-foot cruiser. The fact that the cockpit floor was laid and the cabin roofed over made the job more difficult. A couple of second-hand timbers 2 in. x 14 in. x 25 ft. long

Takes Motor Apart Before Placing on Board.

THE plan shown in the sketch for getting the new motor aboard is a perfectly safe one, although it may not look so to one who has had no experience in lifting heavy machinery by this method. It is not a new invention but has been used for many years in getting aboard engines, boilers, heavy spars and all such work. Considerable tackle and gear will be required, and this would prove expensive if bought for a single job. The transfer companies that do hauling and moving in all cities of any size usually have an equipment of this kind which can be obtained.

A stout pole about 20 or 25 feet long will also be needed. A small telephone pole that is not working will do nicely. Double blocks with about $\frac{3}{4}$ -inch rope should be used for lifting the engine also on the guy ropes. There is to be three of these guy ropes, although only one is shown. The other

two are placed, one at each side, to prevent the pole from falling from that direction. These two need not be quite so heavy as the one shown, which takes most of the load. They could also be used with only a pair of single blocks.

Care should be taken to have the foot of the pole placed so it cannot slip. This is easily done by digging a small hole, if the pole stands on earth, but if on a plank or concrete pier, some other method must be used, such as lashing to a cleat or ring bolt.

In placing the pole, a small line should be attached to the inclined side and kept taut to prevent the weight of guy ropes from throwing the pole over backwards before the engine is hoisted.

Have all the gear of ample size and give the three guy ropes plenty of spread. Be sure that they are made fast to something that cannot pull out. You will then find this rig both safe and convenient.

Another plan for getting the motor aboard is to take it apart and carry it aboard in sections. This method was used by the writer recently. The cylinders, fly-wheel, and reverse gear were removed. Then two men were able to carry the crankcase aboard. The engine was then reassembled. This takes some time, but in this case, it seemed easier than collecting the necessary gear, as the motor was not a very large one.

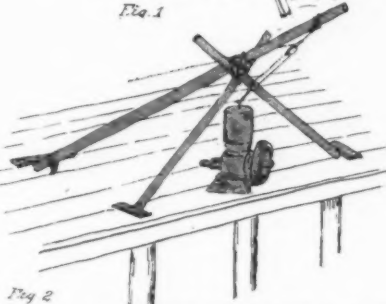
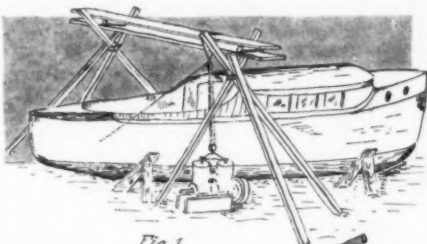
C. H. CHRISTIE, Saginaw, Mich.

Cheap but Effective.

TO get the motor safely aboard the craft without injuring the machine itself or disfiguring the finished woodwork seems a difficult task to many ordinary amateur yachtsmen. If the boat is quartered in some up-to-date ship yard with a well equipped boat shop adjoining, the job is made somewhat lighter with the aid of the portable crane found in such a place. It, however, more oftener happens that the boat is stored in some out-of-the-way spot with very few facilities at hand for the raising and installing of a heavy motor, hence the job is considered tedious. It was just such a coincidence as this which inspired the simple yet successful method as illustrated in the sketch at Fig. 1.

It was an easy matter to construct a temporary cradle under the boat and insert rollers below the cradle. A sort of scaffold or gallows was next erected directly over the engine bed, similar to that shown in Fig. 2. The construction of this is too simple to need any detailed instructions, though, of course, one can elaborate on this device, if necessary. A two-sheave safety hoist was next rigged up and securely lashed to the cross-bar of the gallows. The boat was then pushed forward over the rollers just enough to clear the scaffold, the motor brought under the bar, and firmly fastened to the hoisting

apparatus. The engine was then raised above the boat which was next rolled back to its former position, or far enough to allow the lowering of the motor on the bed. By raising the engine slightly several times and adjusting the same to the required position, perfect alignment was soon secured.



Two arrangements adapted by J. F. C.

When using a device such as this, by all means take care to see that the scaffold and rope are amply strong to hold the weight of the motor. The size of timber and rope will, of course, vary in accordance with the weight of the engine. If you do not happen to have

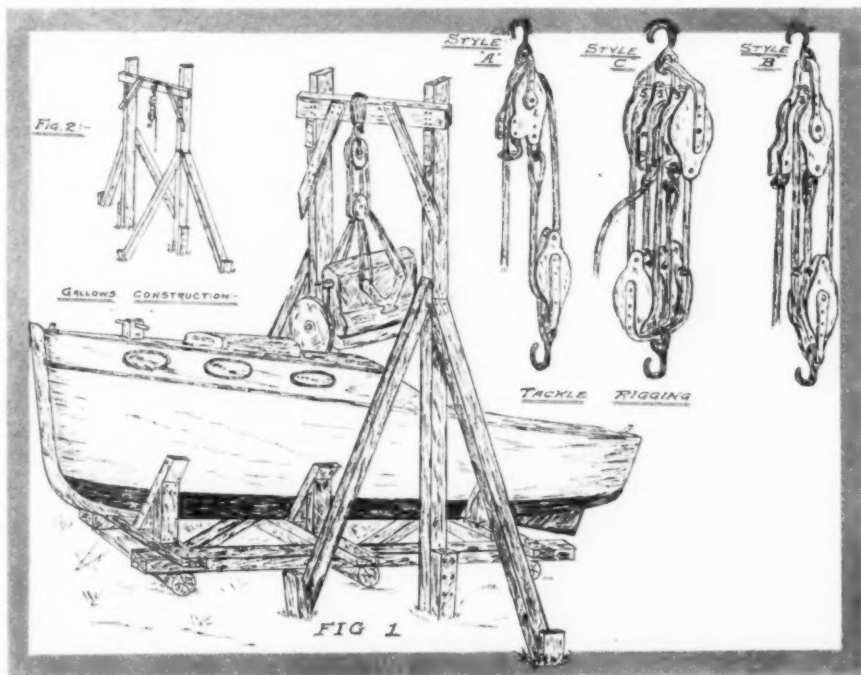
This will prevent your engine from falling should you lose your grip when hoisting the same. The sketch illustrates three forms of tackle rigging for such a lifting requirement and the tabulated data should enable you to select a hoist that will fulfill your wants. This style of hoist is by far less expensive than the differential chain hoist and will do the work just as well. The prices given on the table are for the complete hoist minus the rope.

C. E. BRADLEY, Fall River, Mass.

A Good Scheme for the Amateur.

OF the various jobs which fall to the lot of the motor boat enthusiast probably none is more subject to conditions and means at disposal than getting the engine aboard. Often a job of this kind is a simple matter when the boys are around, but is a difficult proposition for one or two.

Let us assume that the boat has been drawn up, or to make the conditions more interesting, suppose the boat has simply been beached. It is hardly necessary to state that the replacing of an engine, under these conditions requires a little scheming, if the finish of the craft is to be preserved, and perhaps serious consequences avoided. Figure 1 shows how an engine may be taken in or out of the cockpit without endangering the boat in any way, or subjecting it to strains. A heavy plank is propped up in the manner shown one set of props lying quite close to the side of the boat, while ample space should be provided on the other side for hauling up the engine. A second plank is laid over the first with rolls between. These may be short pieces of pipe. A few nails will keep the lower plank in position on the supports which in turn may be lashed together at their crossing point. After hanging the tackle in the manner shown, the engine may be hauled up to the required height and then by means of the rolls slid over the cockpit where it may be lowered. Eye-bolts will be found very convenient in attaching the tackle to the engine, but these should be very carefully fitted well into the spark plug hole to avoid fouling. Figure 2 shows how old spars may be used to lower an engine from a wharf. These should be well lashed together, and the end of the long one on which comes the heaviest strain may be effectually secured by wire carried between the boards to a cross piece underneath. On the whole, it is a matter of good judgment, and with the foregoing suggestions, the average



Perhaps a little complicated yet a sure method, suggested by Mr. Bradley.

man ought to have little difficulty in getting through the job in a satisfactory manner. Be sure that all your apparatus is strong enough and then proceed slowly, planning every step carefully before beginning. Everything will come along in good shape

In selecting your tackle rigging, endeavor to secure a hoist of the patent locking type.

J. F. C.

Exhibitors at the New York and Chicago Motor Boat Shows.

An Index to the Big Exhibitions in Madison Square Garden
and the Coliseum.

The names below are of those who have taken space in the two motor boat shows up to the time of going to press with this issue. Some few additional exhibitors will undoubtedly be seen at both as there are always late changes and newcomers. But even so, the list below will be found to be practically complete when the shows open. After each name is indicated whether that exhibitor will be found at Chicago only, at New York or at both shows.

The American Brass Co. (Ansonia Brass and Copper Branch).....New York	Ferro-Machine & Foundry Co.Both	gine Co.New York
American Launch Co.New York	The Francke Co.New York	New York Coil Co.Both
American Speed Indicator Co.New York	The Frisbie Motor Co.New York	The N. Y. Yacht, Launch & Eng. Co.New York
Anderson Eng. Co.Both	Fulton Mfg. Co.Both	Niagara Motor Boat Co.New York
Apple Electric Co.New York	Gas Eng. & Power Co. and Chas. L. Seabury & Co., Cons.Both	Niagara Motors & Mfg. Co.New York
Berry Bros.Both	Gasoline Eng. Equipment Co.New York	Noyes Machine Co.New York
Blackley Engine Co.Both	Chas. H. Gillespie & Sons.New York	Osborn & Ritchie.New York
Bosch Magneto Co.Both	Generator Valve Co.Both	Palmer Bros.New York
The Bridgeport Motor Co., Inc.New York	L. Gooley.New York	Peerless Marine Motor Co.Both
Buffalo Gasolene Motor Co.Both	Gray-Hawley Mfg. Co.Chicago	Platt & Washburn Oil Co.New York
Bruns, Kimball & Co.New York	Gray Motor Co.Both	Pyrene Mfg. Co.Both
Byrne Kingston & Co., and Kokomo Elec. Co.Both	W. S. Hall Co.New York	Red Wing Motor Co.Chicago
Caille Perfection Motor Co.Both	Halsey, J. K.New York	Regal Gasoline Eng. Co.Both
A. S. Campbell Co.Both	Hartford Suspension Co.New York	Reliance Motor Boat Co.New York
Cape Cod Power Dory Co.New York	Havoline Oil Co.New York	Rice Bros. Co.New York
The Carlyle-Johnson Ma- chine Co.Both	Haynie, W. R.New York	The Rift Climbing Boat Co.New York
George B. Carpenter & Co.Chicago	Heinze Elec. Co.Both	Scripps Motor Co.Both
Chicago Varnish Co.Both	Higgins & Seiter.New York	Edward Smith & Co.New York
Clifton Motor Wks.New York	The Holmes Motor Co.Both	The Snow & Petrelli Mfg. Co.New York
Columbian Brass Foun- dryBoth	Hyde Windlass Co.Both	The Standard Co.Both
Conn. Telephone & Elec. Co.New York	Janney, Steinmetz & Co.New York	Standard Motor Cons. Co.Both
James Craig Eng. & Ma- chine Wks.Both	Jeffery-Dewitt & Co.New York	The Stanley Co.New York
David B. Crockett Co.New York	The S. M. Jones Co.Both	Stanley & Patterson, Inc.New York
Curtiss Aeroplane Co.New York	David Kahnweiler's Sons.New York	Sterling Engine Co.Both
The Debevoise Co.New York	Kermath Mfg. Co.New York	Stromberg Motor Devices Co.New York
F. W. Devoe & C. T. Ray- nolds Co.Both	L. O. Koven & Bros.Both	Sumter Electrical Co.New York
The H. C. Doman Co.Both	Lamb Engine Co.Both	Tebo Yacht Basin Co.New York
C. D. Durkee & Co.Both	Geo. Lawley & Son Corp.Both	The Texas Co.New York
Edison Storage Battery Co.Both	The Lewis Elec. Welding & Mfg. Co.New York	Thermex Silencer Wks.New York
G. D. Eighmie.New York	Loew-Victor Eng. Co.Both	W. & J. Tiebout.New York
Electric Goods Mfg. Co.New York	Luders Marine Const. Co.New York	Toppan Boat Mfg. Co.New York
The Elco Company.Both	Chas. P. McClellan, Esq.New York	Tucker & Carter Rope Co.New York
Elec. Tachometer Co.New York	Hector C. McRae, Esq.New York	Union Stove Works.New York
Erd Motor Co.Both	Marburg Bros., Inc.New York	Valentine & Co.Both
Evans Stamping & Plating Co.Both	Marine Efficiency Co.New York	Valley Boat & Eng. Co.Both
Evinrude Motor Co.Both	The Matthews Boat Co.Both	Van Blerck Motor Co.Both
Fairbanks - Morse & Co.New York	Mechanical Devices Co.New York	Verrier-Eddy Co.New York
Fay & Bowen Eng. Co.New York	Mercury Motor Co.New York	The Water Craft Co.New York
	August Mietz I. F. & Mach. Co.New York	Weckler Boat Co.Chicago
	Chas. E. Miller, Esq.New York	Wheeler & Schebler.Both
	Milwaukee Yacht & Boat Co.Chicago	Morris M. Whitaker.Chicago
	Milton Boat Wks.New York	Wilcox, Crittenden & Co.New York
	Monarch Valve Co.New York	Wilmarth & Morman.Chicago
	Monitor Boat & Eng. Co.New York	E. J. Willis Co.New York
	The W. H. Mullins Co.Both	Winton Gas Eng. & Mfg. Co.Both
	Murray & Tregurtha Co.New York	Wolverine Motor Wks.New York
	The Mystic Motor Co.New York	C. A. Woolsey Paint & Color Co.Both
	New London Ship & En-	

The 1914 Motor Boat Shows.

Description of the Various Exhibits Seen in New York, Jan. 31st to Feb. 7th, and at Chicago, Feb. 28th to March 7th. A Comprehensive Exhibition of Engines, Boats and Accessories.

The Elco Company, of Bayonne, N. J., have a comprehensive exhibit at the New York Show, located in the same position in the Garden as heretofore, near the entrance to the building, and at the Chicago Show as well. One of their most interesting exhibits is their

The Luders Marine Construction Company, Stamford, Conn., are exhibiting at the New York Show a 51-foot day cruiser of the Kathmar I type that they brought out a couple of years ago, and have since been elaborating on with considerable success. This boat is 9

lent retreat to repair to on a windy day.

The American Launch Company, Bayonne, N. J., have on exhibit at the New York Show, their 22½-foot auto express, which is equipped with a four-cylinder, 3¼" x 5½", four-cycle motor developing 30 h.p. at 1,000 r.p.m. The auxiliary equipment includes a Baldridge reverse gear, Bosch high-tension magneto, rear starter, Kenyon auto top, electric searchlight, running lights, etc., and Atlas electric horn. The boat is planked in cedar, copper-riveted over burrs, and the finish is in mahogany. Seats and backs are very handsomely upholstered in Spanish moroccoline leather to match the mahogany finish. The outfit, exclusive of cushions and top, sells for \$975, and the top is \$30 extra and the cushions \$20 extra.

The Milton Boat Works, of Rye, N. Y., are showing at New York, two of their representative boats, in a 22½' runabout and a 12' dinghy. The latter is fitted with a 2 h.p. Waterman engine, and the runabout is powered with a 2-cylinder, 11 h.p. Ferro engine with reverse gear and rear starter, the power plant being designed to give the boat a speed of 13 miles an hour. A 20-gallon gasoline tank of heavy copper is located under the helmsman's seat, and all fittings are for salt water service. Both of these boats are built in the best possible manner of first-class materials, and they are high grade in every respect. As practically all of the work of this concern is to special order they have on exhibition blueprints showing the various types of pleasure craft to show prospective customers.

Rice Brothers Company, of East Boothbay, Me., are exhibiting this year at New York a 20-foot Auto-Launch and a 22-foot Auto Family Launch which will be their leaders for 1914. The former of these is a boat on the order of the automobile, steering-wheel and controls being practically the same. The size and general arrangement are ideal for four to six persons, and the style and natty appearance appeal to those who want a boat at their summer homes. The 22-footer is a fast family launch with a beam of 5 feet, in which quality, speed, comfort and seaworthiness are combined. The lines of the boat show a high, flaring bow, and broad and flat midship section running into a comparatively wide V-shaped stern. The work on both these boats is of the best order, and the prices are reasonable.

George Lawley & Son, Corporation, Newport, Mass., are at the Shows at New York and Chicago with their heavy-duty engines and one or two well chosen models of their boats. Lawley motors are of the heavy-duty type, and are made in three sizes of four-cycle design—two, four and six cylinders, developing 20, 40, and 60 h.p., respectively. This concern builds boats of all kinds, from a ten-foot yacht tender to the largest auxiliary yachts, of wood, steel or composite construction. Lawley work is done under the best possible conditions by experienced workmen and it is all guaranteed.



A commodious 50-ft. cruiser, built by the Matthews Boat Co., of Port Clinton, Ohio.

26-foot Elco runabout, here shown for the first time. This is an inexpensive high-grade runabout with a guaranteed speed of 22 m.p.h. With a V design of hull, the engine is located forward with seating space aft. The motor installed is a 40 h.p., 4-cylinder Elco. Another new design is a 30-foot Express, equipped with a 50 h.p. Elco motor, and also having a speed of 20 miles. A new 36-foot Elco Express to replace their 35-footer is shown, and their well known 45-foot Elco stock cruiser is also to be seen. This boat, powered with a Standard engine, has always been a very popular model. A full line of Elco marine engines, to which a 50 h.p., 4-cylinder machine is the latest addition, is on display, and the presence of a Nlsec Diesel engine built by the New London Ship and Engine Company, of Groton, Conn., and identical with the engine installed in Idealia, the first Diesel yacht in America, makes the exhibit the most complete the Elco Company has ever had.

The Matthews Boat Company, of Port Clinton, Ohio, are exhibiting two representative models at the New York Show, and one at Chicago. The two at New York are a 50' cruiser and a high-grade 17' yacht tender. The general idea of the 50-footer is to produce a wholesome cruising type without any attempt at high speed, but embodying in the design all features that tend toward sound and substantial construction, and with it, a beautiful finish. The tender, also at the New York Show, is 17' in length with a beam of 4'8", and is to be used on a 100' high-speed cruiser now building at this company's plant. The boat is beautifully finished in Spanish cedar, and is equipped with a 10 h.p. Sterling Kid motor, located under a hood, with all controls brought to the steering-wheel location. Seats are for six persons.

The Toppan Boat Manufacturing Company, Boston, Mass., are exhibiting at New York three of their boats, which they believe will attract a good deal of attention. One of these, their new Special Government Model dory they consider the best boat of its kind they have ever put out, as there are embodied in it the improvements of several years. Another model on exhibition is a 22-foot, smooth-planked dory with 6-foot beam, equipped with a 6 h.p. Gray motor enclosed aft. This boat, which is considered a good, reliable craft in rough water, is also being made in many other sizes, both larger and smaller than the 22-footer. Their 16-foot Toppan Sportsman, which sells for \$150, is another model which they are pushing. This boat has a speed of 7 miles per hour, and it is high and wide, and especially adapted for family use. At the Show this concern will distribute literature about their many models which will be of interest to all.

feet wide and has a draft of approximately three feet, with a speed of 14 or 15 miles obtained from her 60 h.p. Sterling engine. Forward, the boat is of the raised-deck type, the machinery being housed under this deck. Immediately following is a



50-ft. day cruiser, special feature of the Luders Marine Construction Co.'s exhibit.

sunken cockpit left clear for easy chairs, and aft is the main cabin, having extension sofas, mahogany table, etc., while the remainder of the boat is taken up by an after cockpit. The engine is controlled from the central cockpit, and the after cockpit, protected by the after house as it is, makes an excel-



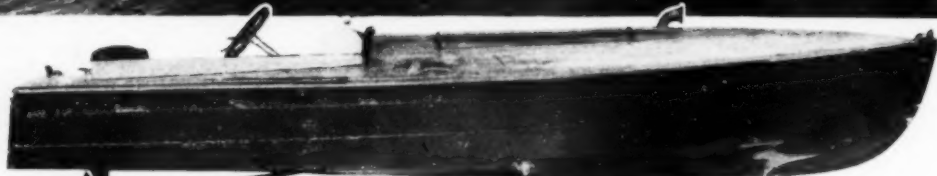
45-ft. cruiser, built by the Elco Company, Bayonne, N. J., which with a 35 h. p. Standard motor is capable of 11 miles per hour.



Stock Boats of the Open Type



A neat and fast runabout built by the Niagara Boat Co., of North Tonawanda, N. Y.



Mullins steel hydroplane, 16-ft. long, 25 h. p., speed 28 miles.



20-ft. auto runabout built by Rice Bros. Company, of East Boothbay, Maine.



35-ft. Elco express powered with a 60 h.p., 6-cylinder Elco motor, having a speed of 24 miles per hour.



22 $\frac{1}{2}$ -ft. runabout built by the Mil-

ton Boat Works, of Rye, N. Y.



The Sportsman motor dory manufactured by the Toppan Boat Company, of Boston, Mass.—one of their many stock models.



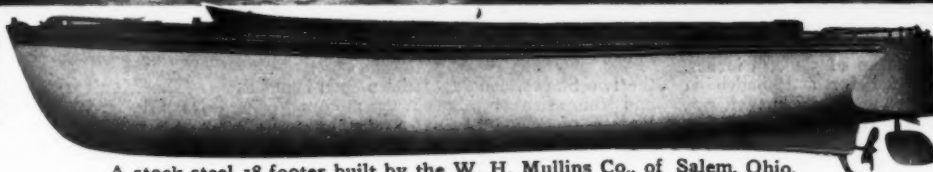
Fast runabout built by the Fay & Bowen Engine Co., of Geneva, N. Y.



at the 1914 Motor Boat Shows.



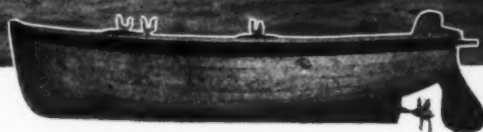
30-ft. Speedway runabout powered with a 24-30 h.p. Speedway motor and having a beam of 6 ft. and a draft of 2 ft. 2 in.



A stock steel 18-footer built by the W. H. Mullins Co., of Salem, Ohio.



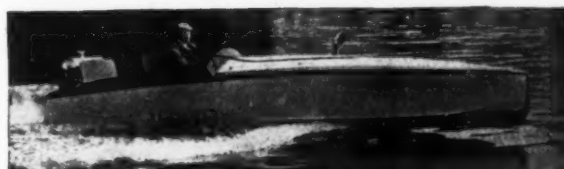
A 33-ft. runabout built by the Geo. Lawley & Son Corporation, of Neponset, Mass.



12-ft. Dandy Dink, powered with a two-cylinder Brownie engine, sold by the Water Craft Company.



One of the stock runabouts built by the American Launch Company, of Bayonne, N. J.



Stock hydroplane manufactured by the Milwaukee Yacht & Boat Company.

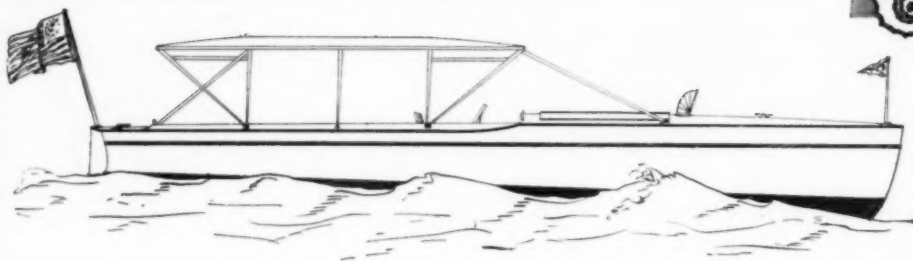


One of the stock lap strake yacht tenders manufactured by the Gas Engine & Power Co. and Chas. L. Seabury & Co.

The Motor Boat Shows

The Niagara Motor Boat Company, of North Tonawanda, N. Y., exhibit in their space at the Garden two handsome runabouts, the larger being 37 feet in length with 6-foot beam, and the smaller having a length of 28 feet and a beam of 5 feet 6 inches. The larger boat shows a nicely modeled hull with a straight racy sheer line, a sharp-rounded stern, and the after quarters tumbled home. The general construction is unusually substantial, no attempt having been made to produce a light, high-speed model. A six-cylinder, 60-65, Fay & Bowen motor, fitted with electric starter and lighter, is installed under a slightly raised engine compartment about 11 feet from the stern. The smaller boat is very similar to the 37-footer, and, while not so luxuriously appointed, there is a wealth of conveniences aboard her. She is powered with a four-cylinder, 20-35 h.p., Fay & Bowen, 4-cycle motor.

The Reliance Motor Boat Company, of New York, are exhibiting at the Garden this year two boats which they have just completed. One of them, which is shown in the Van Blerck space, and is powered with a Van Blerck, six-cylinder, $5\frac{1}{2} \times 6$, high-speed motor with Bosch double-point ignition, etc., is 29 feet in length with a beam of 5 feet 3 inches. This boat was designed for a Philadelphia yachtman for use on the Shrewsbury River, and one of the conditions of the sale is that she must show a speed of 33 miles an hour. The entire boat is of selected mahogany, ex-



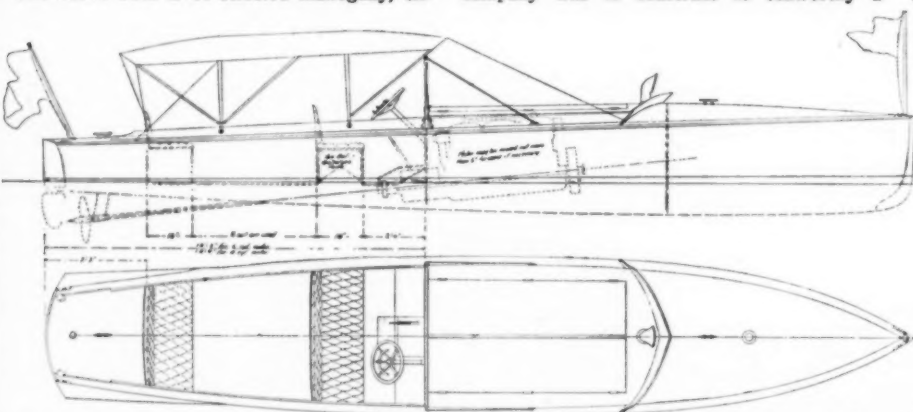
Stock runabout designed and built by the Niagara Motor Boat Co., North Tonawanda, N. Y.

the two Shows, consist of three open launches and four sizes of Speedway motors. The largest of the boats is a 50-foot mahogany, seagoing runabout. The intention of the company was to construct as seaworthy a

The Monitor Boat and Engine Company, Newark, N. J., have on exhibition at the Garden 24 models of various types and styles of open and cabin boats, ranging from the small family boat to the 50-foot bridge deck cruiser, and, in addition to this, four sizes of Monitor engines, namely, one each of their single-cylinder medium and heavy-duty, and one each of their two-cylinder medium and heavy-duty motors. They are also showing, as an attachment to the single-cylinder engines, the Gere Reverse Mechanism which is said to positively reverse the engine. It is claimed for this feature, which is being fully demonstrated, that it solves the problem of reversing the single-cylinder engine without the use of reverse propeller wheel or reverse clutch mechanism, as it is designed to replace both.

The Valley Boat and Engine Company, Saginaw, Mich., are exhibiting four of their "Faultless" boats at the two Shows. One of these, a 19-foot runabout, is equipped with a 12 h.p.

Kermath motor, and a speed of 16 miles an hour is claimed for it. It is finished in white cedar with mahogany trimming, and it has the neat appearance which can only be obtained by the use of the best materials and workmanship. The 16-foot Valley hydroplane, which proved herself to be a fast and steady little boat last season, is also on view, powered, as usual, with a 4-cylinder, 40 h.p., Roberts motor which drives her at over 30 m.p.h. A V-bottom runabout, 22 feet in length by 4 feet 6 inches beam, powered with a 10 h.p. Fulton engine and a 19-foot special hydroplane with a 6-60 Roberts motor, complete the exhibit. The latter is a comfortable four-passenger speed boat whose top speed is 35 m.p.h.

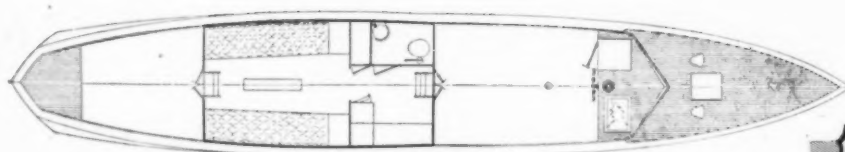
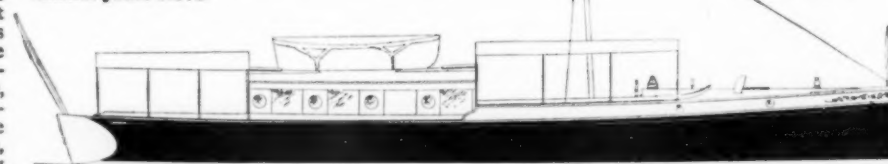


Runabout built by the Reliance Motor Boat Company, very similar in design to the famous Cinderella.

clusive of the white oak timbers. The boat is complete with U. S. L. 1914 electric starting apparatus, electric searchlight, running lights, Klaxon horn, Reliance windshield, wicker armchairs, etc., and the makers say that she is a work of art in every detail. The other boat exhibited in the Reliance Company's space is an exact duplicate of the famous Cinderella, and is equipped with a 1914 four-cylinder Sterling motor. She is 26 feet by 5 feet 1 inch beam.

The W. H. Mullins Company, Salem, Ohio, manufacturers of pressed steel boats and standardized wooden boats, are showing at New York and Chicago this year nine models of both types. Of especial interest to the prospective boat buyer is the Mullins line of standardized wooden launches—a line built after designs by Whittlesey & Whittlesey, which are not only pleasing to the eye, but will be found thoroughly staunch and seaworthy. The latest addition to this line is the Mullins-Arrow, a 25-footer with 5-foot beam, drawing 6 inches, which has a seating capacity of from eight to ten persons. This boat is of carvel construction with vertical and horizontal battens back of all seams. There is a choice of motor installation, either a 35 h.p. Sterling or a 15 h.p. Ferro being fitted as regular equipment. Of the eight other boats shown, one is their 26-foot steel boat, another is their 16-foot steel hydroplane, and a third is their 18-foot Steel Leader launch.

boat as possible for her size, style and speed. She is planked and finished in bright mahogany, and is powered with a six-cylinder, 6×6 Speedway, 60-80 h.p. motor, giving her a speed of 15 m.p.h. The next boat is one of their stock, 30-foot Speedway runabouts, having beam and draft of 6 feet and 2 feet 2 inches. Powered with a 4-cylinder, $4\frac{1}{2} \times 5$, 24-30 h.p., Speedway motor, she also has a speed of 15 miles. The third boat is a Speedway, 21-foot clinker-built boat with a speed of 15 or 16 m.p.h. The engine exhibit consists of a 16-20 h.p. motor, a 60-80 h.p. machine, a 7 k.w. electric lighting set, and a 175 h.p. fuel oil engine. There is also Speedway 4-hole, alcohol yacht stove.



50-ft. cruiser of exceptional features being exhibited by the Luders Marine Construction Company, of Stamford, Conn.

The exhibits of the Gas Engine and Power Company and Charles L. Seabury & Company, Cons., Morris Heights, New York City, at

The Marine Motors Exhibit.

W. R. Haynie, New York, is displaying a single-cylinder, direct reversible Bolinder engine at the New York Show. This is an engine developing net 15 h.p. at 450 r.p.m., with a fuel consumption of .6 lbs. of crude or fuel oil per h.p., delivered. At the Show it is fitted with stern tube, shaft and propeller complete. These Bolinder engines are built in sizes from 5 to 180 h.p. in single cylinders; from 10 to 160 h.p. in twin cylinders, and from 60 to 320 h.p. in four cylinders. There are a number of photographic views of the different engines and installations, and an ample supply of literature describing the Bolinder marine oil engine. There are over 6,000 Bolinder marine engines in use to-day.

The New York Yacht, Launch and Engine Company, Morris Heights, New York, are exhibiting this year their 30-40 h.p., 6½" x 8½", 4-cylinder Twentieth Century motor. This motor, like all the others in this line, is of substantial construction with Twentieth Century reverse gear contained in a cast iron drum, fitted to the base of the engine casting and held rigidly in line. A special grade of high carbon, steel-hammered forging is used for the crankshaft and connecting rods. Cams, rollers and wrist pins are made of hardened and ground steel, while the crank bearings are of phosphor bronze; the main bearings are of the best babbitt metal or bronze as desired, and all are adjustable for wear. The carbureter used is also of Twentieth Century make, and is adjusted by an index needle, which, when set, requires no further attention. This company makes a specialty of building large right and left-hand engines for twin-screw boats.

The Fulton Manufacturing Company, Erie, Pa., are exhibiting at the New York and Chicago Shows Fulton engines in five types. The first of these is the Fulton Self-Sparking, two-cycle, medium-duty engine, which is built in six sizes, all of which are equipped with their self-sparking ignition system which entirely eliminates all coils, batteries, timers, vibrators, etc. This type of ignition has been used for four years and found by the company the most satisfactory for two-cycle engines. Several sizes of the Fulton Special, which is a lighter weight jump-spark engine, suitable in semi-speed boats and runabouts, as well as the average type launch, are being shown. Several sizes of their four-cycle, heavy engines are exhibited, and the Fulton Flyer in several sizes is also shown. They also have three Fulton Diesel engines for the first time.

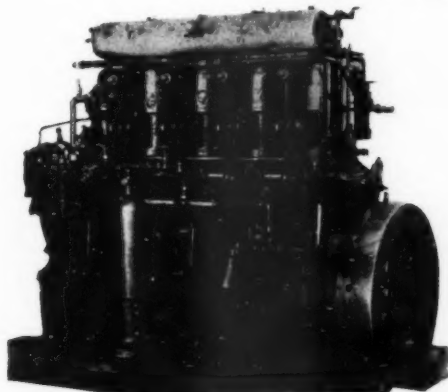
Fairbanks, Morse & Co., New York, are exhibiting a number of marine engines at the Garden, of which the most interesting, perhaps, is their new 45 h.p., hot bulb or semi-Diesel engine. This engine, which is designed to operate on low-grade fuel, is built in one, two, and three cylinders of 15, 30 and 45 h.p., respectively. The cylinder dimensions are 8" x 10", the whole machine being of very heavy design, especially adapted for work boats, and also for people who desire economy in cost and consumption of fuel. The company state that they have had one of these engines in constant operation for the last ten months, and that it has performed to the satisfaction of every one concerned. Of the other models shown, one is Type E, built in single and double cylinders with 3½ and 7

h.p., and another is Type K, also in one and two cylinders of 7½ and 15 h.p.

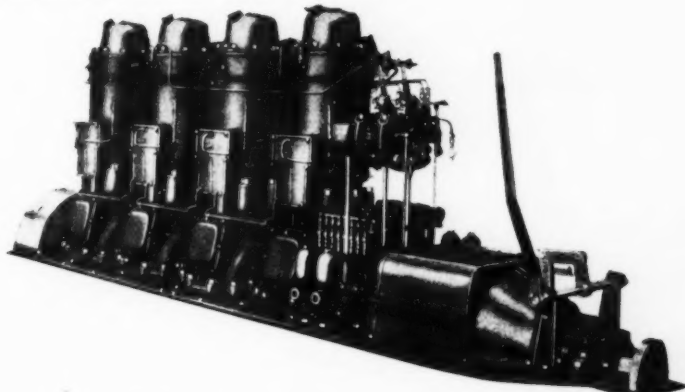
The James Craig Engine and Machine Works, Jersey City, N. J., are showing at both New York and Chicago a representative display of their line of marine engines. These engines are all of the four-cycle type and embrace a field which covers nearly every kind of heavy-duty service. The smallest of these is an 18 h.p., 3-cylinder engine with cylinder dimensions of 6" x 7", and this type is also made in four cylinders. The largest is a 300 h.p., six-cylinder motor with bore and stroke of 11" x 12" which weighs 10,000 lbs., and turns over at 400 r.p.m. In addition to their regular line, they are also showing a new motor of the Diesel type.

The New London Ship & Engine Company, Groton, Conn., are exhibiting at the New York Show one of their 150-180 h.p., six-cylinder, low-speed, single-acting, two-cycle Nlsec Diesel engines. This is the second engine of its type to be built in America. The first one was a four-cylinder model of the same general characteristics. This six-cylinder engine of the four-cycle type runs normally at 350 r.p.m., being slow enough to obtain results with the most efficient propeller on commercial vessels, coasting schooners, fishing craft, tugs, and passenger ships, but it can be speeded up to 400 r.p.m. with a proportional increase in power, if desired. The cylinders are 9" in diameter and have a stroke of 12½". For larger types of engines this company makes them directly reversible, but for an engine of this size where a suitable reverse gear is obtainable, they consider the reverse feature unnecessary.

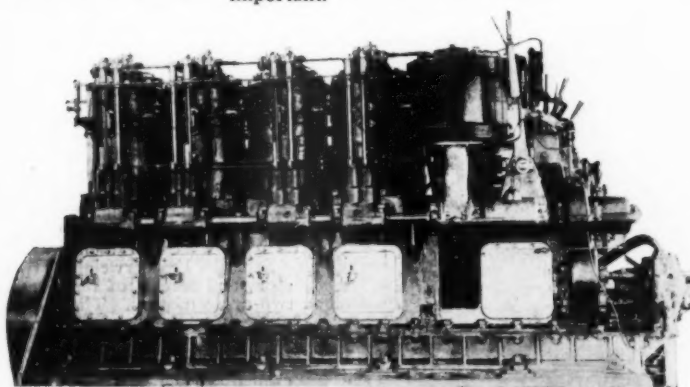
Diesel Motors Exhibited for First Time.



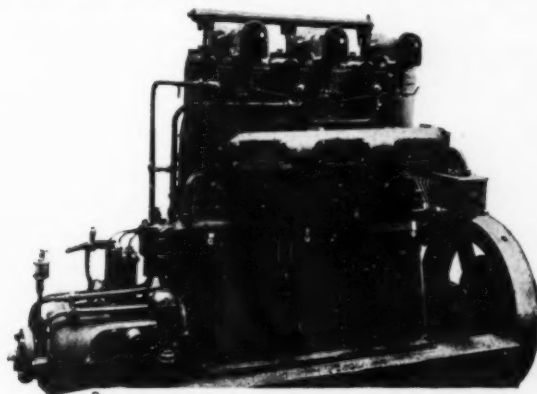
45 h. p. 3-cylinder hot bulb semi-Diesel engine, manufactured by Fairbanks-Morse & Co., and having a bore of 8" and a stroke of 10". This motor is especially adapted for work boats, where operating cost and fuel economy is important.



320 brake h. p. Bolinder Diesel engine of the two-cycle type, costing about fifty dollars per h. p. installed. This motor is direct reversible, operates at 225 r. p. m. and weighs approximately 49,600 lbs.

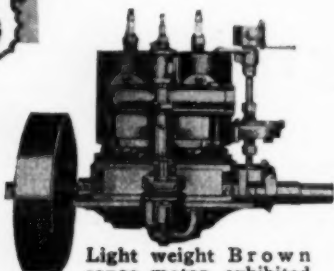


Speedway 4-cylinder, 2-cycle Diesel engine, self-reversing with single scavenging cylinder driven from a separate crank on the after end of the motor. The cylinders are 9" bore, 12" stroke and are fitted with loose heads.

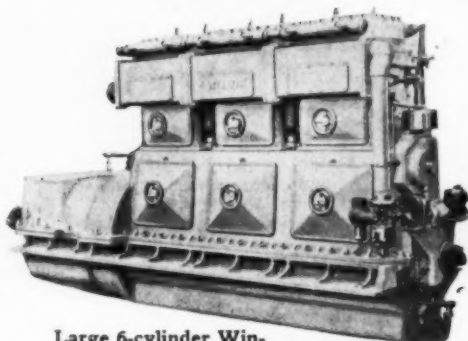


150 h. p., 4-cylinder, low speed, single acting, non-reversible, Nlsec Diesel engine, very similar to the 6-cylinder Diesel engine exhibited by the New London Ship and Engine Co.

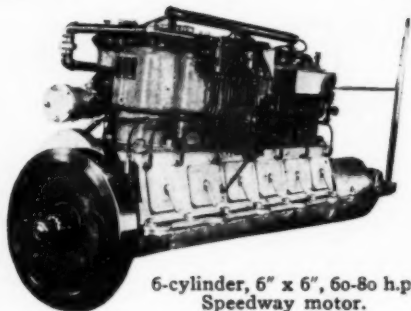
The MOTOR BOAT SHOWS



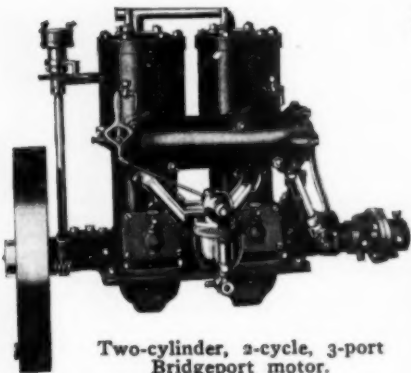
Light weight Brown canoe motor, exhibited by the Water Craft Company.



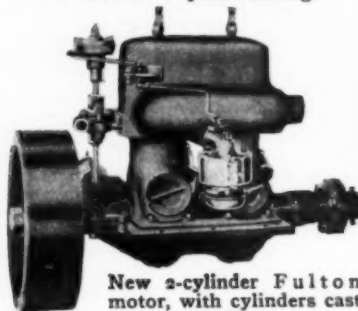
Large 6-cylinder Winton motor, suitable for motor yachts and noted for its quiet running.



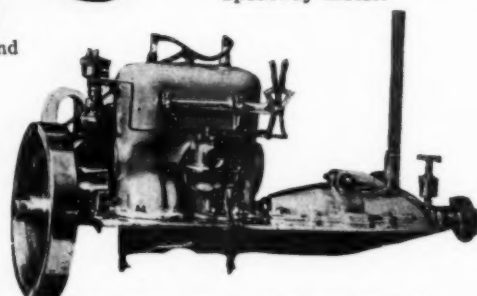
6-cylinder, 6" x 6", 60-80 h.p. Speedway motor.



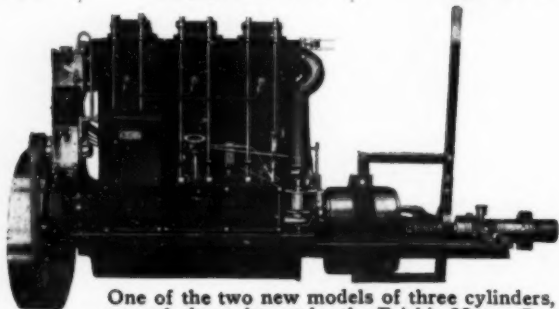
Two-cylinder, 2-cycle, 3-port Bridgeport motor.



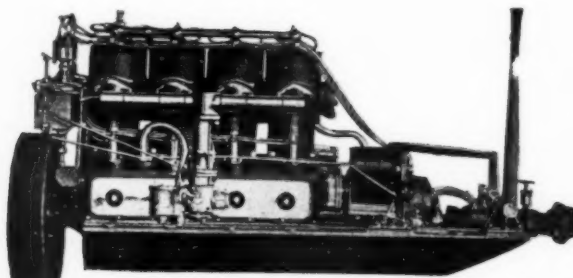
New 2-cylinder Fulton motor, with cylinders cast en bloc.



New Baby Grand motor just brought out by the Gray Motor Co., of Detroit, Mich.



One of the two new models of three cylinders, recently brought out by the Frisbie Motor Co., of Middletown, Conn. The smaller is 4 3/4" x 5" and the larger, 6" x 6".



The reliable Van Blerck 4-cylinder motor adapted for both cruiser and speed work.

The Winton Gas Engine and Manufacturing Company, Cleveland, Ohio, have on exhibition at the Shows this year three six-cylinder engines as follows: One 125 h.p. machine with cylinder dimensions of 8" x 11"; one 5 k.w. generating set with bore and stroke of 3" x 4"; and a 7 h.p. 2 1/4" x 3" tender engine, installed in a mahogany yacht tender, 18 feet long, built by the George Lawley & Son Corp., Neponset, Mass. These machines, which are all painted in white enamel, the standard finish of this company, represent the quality of marine engines they are now building. This concern expects to do a big business this year, and it states that nearly all the large motor yachts built in the east during the last year were powered with Winton engines.

The Gray Motor Company, Detroit, Mich., are exhibiting at both Shows practically a complete line of their motors, including two new motors which have just been brought out. Of these, the most important is their new four-cycle machine made in two models—a four and a six. The cylinder dimensions are 4 1/2" bore by 5 1/4" stroke, and the four-cylinder machine develops a good 20 h.p. at 700 r.p.m., and a little over 30 h.p. at 1,000 r.p.m. The six-cylinder model develops 35 to 50 h.p. The motor is made a unit power plant, and the base of engine and clutch cover are made of aluminum. The oil pan is made of iron to add strength and rigidity; the bearings are large and the wearing surfaces ample. The other innovation is the Gray Baby Grand, a two-cylinder, 6 h.p., Gray unit power plant for yacht tender service. The regular line of two-cycle motors manufactured by the Gray Motor Company, which is so well known by all users of marine motors, is attractively displayed. There is a Gray motor for every requirement.

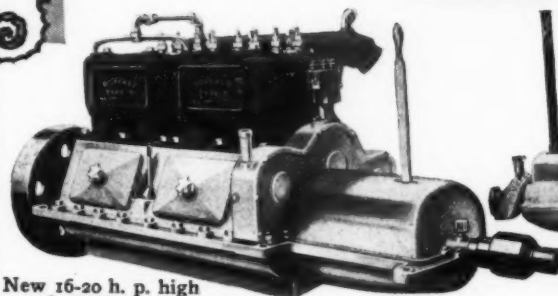
The Van Blerck Motor Company, of Monroe, Mich., have the same stand at the Garden that they have had in previous years, directly opposite the main entrance. Here, as well as at Chicago, a representative line of engines is exhibited, including a two-cylinder, medium-duty 5" x 6" motor, designated as Model B-2. The B-4 Special, also exhibited, is a beautiful illustration of a compromise, medium-high-speed type of motor. This engine is fitted with aluminum crankcase and high-speed oiling device which makes it especially suitable for fast runabouts, ranging in size from 20 to 35 feet. The Van Blerck high-speed engines are represented in two models—the C-4 and C-6, the latter being fitted with complete Northeast electric starter. These models have 5 1/2" bore by 6" stroke, and are rated at 1,200 r.p.m. They are especially suitable for fast runabouts and speed boats. The eight-cylinder racing motor known as C-8, and also shown, is claimed by the makers to develop 230 h.p. at 1,750 r.p.m.

The Bridgeport Motor Company, Inc., Bridgeport, Conn., are showing at New York, a complete line of their gasoline and kerosene motors. Models R, R-2, S, and S-2, being 8 and 16 h.p., and 11 and 22 h.p. of the single and double-cylinder types are heavy-duty speed models for gasoline, and an addition to the regular line for 1914. These models have been designed especially for installation in the Jersey fishing skiffs or surf boats and similar craft of easy-driving qualities. They will also be suitable for pleasure boats. In addition to these motors, they are also exhibiting one of the famous Jersey fishing boats as used in countless numbers by the fishermen along the Atlantic Coast, and in which the Bridgeport motor has been so deservedly popular.

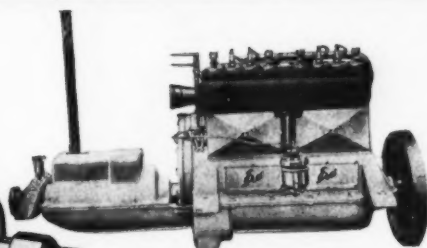
The Frisbie Motor Company, Middletown, Conn., are displaying at the New York Show a single-cylinder, 3-5 h.p. motor and two double-cylinder motors of 6-10 and 10-14 h.p., one of which is equipped with kerosene burning manifold and also with a lobster hoist which will be of special interest to fishermen and those engaged in similar pursuits. There are also shown two of their new engines which are now being brought on the market. These are three-cylinder motors, one having bore and stroke of 4 1/4" x 5" and the other 6" x 6". These motors embody some very interesting features. The cylinders are cast en bloc with the manifolds an integral part of the casting. Lubrication is so arranged that such small parts as rocker arms, push rod tops, mushroom guides, etc., can go a long time without attention. Other motors are also shown, but these new models are the features of the exhibit.

The Erd Motor Company, of Saginaw, Mich., are exhibiting at New York and Chicago two of their new 25 h.p., four-cylinder, four-cycle, en bloc motors—a high speed type (aluminum) suitable for fast speed runabouts and fast family boats, and a Standard type (iron) suitable for small cruisers and work boats. They also show one of their 30 h.p., three-cylinder Special Featherweight, two-cycle speed motors and several of their regular standard two-cycle motors. The Valley Boat and Engine Company, of Saginaw, Mich., are exhibiting a 19 foot runabout powered with one of the new Erd 25-h.p. motors. This runabout, which is cedar built and mahogany trimmed, is fitted with reverse gear and rear starter, and is patterned after the new wave collecting type. Its speed of 20 m.p.h. is better than has been obtained in any other boat with the same engine.

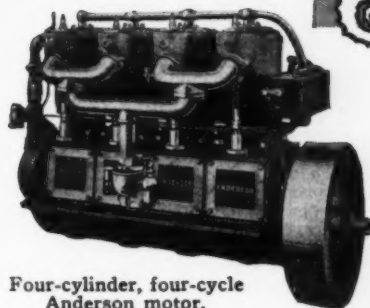
The Motor Boat Shows



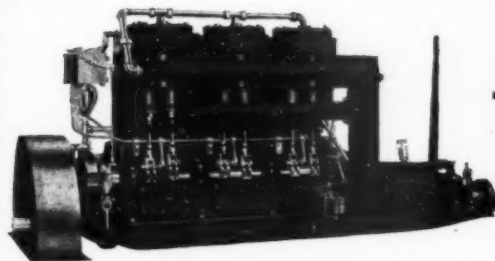
New 16-20 h. p. high speed Buffalo, having four cylinders $3\frac{3}{4} \times 5$ ", developing its power at 800 r. p. m. and weighing but 550 lbs.



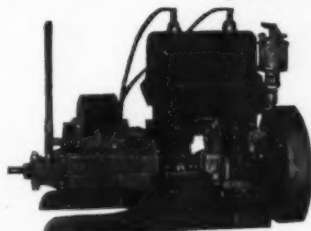
Erd motor, 25 h. p. at 900 r. p. m.



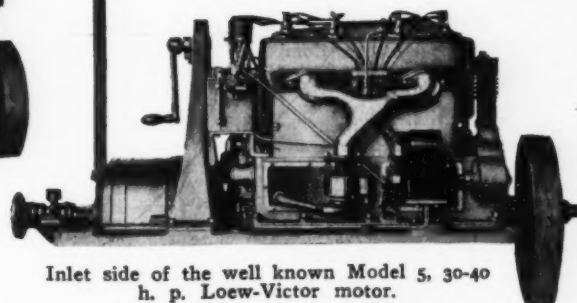
Four-cylinder, four-cycle Anderson motor.



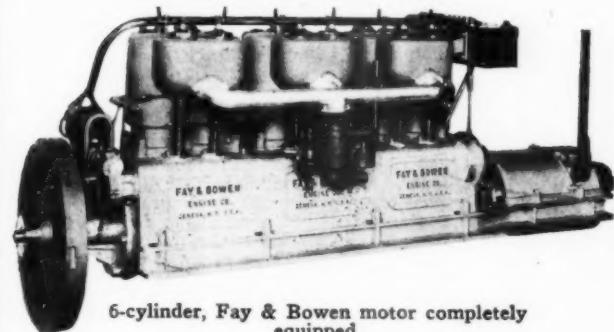
3-cylinder Wolverine motor, especially suitable for cruiser and heavy work.



Carlyle-Johnson's Bud-E motor weighing only 110 lbs.



Inlet side of the well known Model 5, 30-40 h. p. Loew-Victor motor.



6-cylinder, Fay & Bowen motor completely equipped.



Well known 6-cylinder Twentieth Century motor.

The Buffalo Gasoline Motor Company, Buffalo, N. Y., are exhibiting at the two big Shows eight models of their line of marine engines, of which the 85-100 h.p., heavy-duty, four-cylinder, 10×12 " motor, and the 16-20 h.p., high-speed machine are the leaders. The latter is their new model, and it is a modern engine in every respect. All valves, gears, and, in fact, all working parts, are enclosed, though easily accessible by means of large panels. It is equipped with aluminum base which contains the crankshaft bearing, and which is of the regular Buffalo solid extension type. The cylinders are of the L-type, cast in pairs, and the pistons are of gray iron, four rings to each piston, all located above the piston pin. Lubrication is by constant level splash, and the cooling system presents some good features, the water entering the cylinders directly below the valves and leaving them at the top of the opposite side.

The Wolverine Motor Works, Inc., Bridgeport, Conn., are exhibiting at New York, a 36 h.p. engine, fitted up to use suction producer gas, and they also have on display a Galusha producer, which is being used successfully in various countries in connection with Wolverine engines. The first advantage claimed for the use of this fuel is economy. Gas producer coal at \$5 a ton, the company points out, is as cheap as oil at 2 cents a gallon, and while 100 h.p. can be procured for 10 hours from \$2.50 worth of coal, under the same conditions liquid fuel at 10 cents per gallon will amount to \$12.50, and gasoline at 16 cents to \$20. All Wolverine motors are fitted to use kerosene and some of the lower and cheaper grades of oil for fuel, so the features of their exhibit will be their kerosene engine and suction producer gas engine, which are practically the same machine with a few minor changes when producer gas is to be used.

The Anderson Engine Company, Chicago, Ill., are showing this year at both Shows, four of their models, consisting of a 24 h.p., four-cylinder machine with bore and stroke dimensions of 5×6 ", and three two-cylinder engines in 12, 8 and 5 h.p., with cylinder dimensions respectively, 5×6 ", $4\frac{1}{2} \times 5$ " and 4×4 ". The cylinders of these motors are made of a special mixture of close-grained iron and cast with solid heads so as to require no gaskets. Much care is given to their special reaming and machining. The pistons are made of the same material, light in weight but strong, and carefully ground and fitted. The rings are turned eccentric from special casting, split-step fashion, ground and fitted. The crankcase is of special casting, well designed and as light as is consistent with the strain it must withstand. Baldrige reverse gears are fitted on the 5 and 8 h.p. engines, and Paragon gears on the larger sizes.

The Carlyle-Johnson Machine Company, Manchester, Conn., are showing at both Shows their Bud-E marine motor, No. 1 Model E marine reverse gear of their new ball bearing design put on the market this season. The Bud-E motor, which is well known to motor boatmen, is a 5 h.p., unit power plant for use on light tenders, canoes and light speed boats. It is a two-cylinder, 2-cycle, 3-port motor with the cylinders cast en bloc, and is extremely compact, being only 25 inches over all in length. It is said to be the smallest unit power plant manufactured. The Model E reverse gear is a vanadium steel gear which is entirely encased so that no foreign matter can get into the bearings, and yet it is easily accessible for oiling or adjustment by two thumb screws in the upper half of the case.

The Fay & Bowen Engine Company, Geneva, N. Y., are exhibiting at the Garden, in addition to their complete line of type L, four-

cycle engines, their 25-foot "Special" family launch, and a de luxe model of their 26-foot runabout. As regularly constructed, this 26-footer, designed by Morris M. Whitaker, has framing timbers of the best white oak, copper or bronze fastened, with southern white cedar planking and plank-sheer, sheer-strake, rub-strake, decks and entire interior finish of mahogany, but the show model has planking entirely of mahogany. Instead of the usual hand crank for starting the engine, this Show boat carries an electric starter and the boat is fitted with electric lights. The 25-foot "Special" is shown in regular construction equipped with this company's 4-cylinder, 10 h.p., four-cycle motor which gives it a speed of 14 miles an hour. Although this year's leaders for this company are their type L, four-cycle engines, they are also exhibiting one of their old reliable 10 h.p., two-cylinder, two-cycle engines complete with reverse gear.

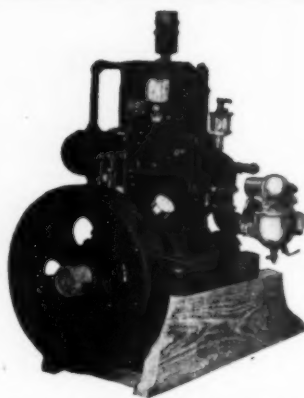
The Loew-Victor Engine Company, Chicago, Ill., are exhibiting at the Shows in New York and Chicago one each of ten models of marine engines, ranging from their Model 10, 6 h.p., one-cylinder engine to their Model 10, six-cylinder, 130 h.p. machine, adaptable to cruisers and work boats over 45 feet in length. The latter is especially recommended by the company for high-speed commercial boats or cruisers where high power is necessary, together with moderate weight. Of the other eight engines shown, one is of the two-cylinder type, one three-cylinder, four four-cylinder, and two six-cylinder. These engines comprise a line of engines suitable for practically all pleasure and work boats. The four and six-cylinder machines can be fitted with the Leece-Neville lighting and starting system, which has proved itself on these engines to be thoroughly dependable and trouble-proof, at an additional cost of \$250. This company is also showing a Hand V-bottom boat.

The Motor Boat Shows

The S. M. Jones Company, Toledo, Ohio, are exhibiting at the Shows the newest addition to their line of Ralaco engines, as well as some of their older models. The new motor is a six-cylinder affair rated at 40 h.p., with cylinder dimensions of 5" x 7", and it embodies all the essential features of Ralaco design, being identical with their four-cylinder engine with the same cylinder dimensions. This engine, however, is equipped with a self-starting outfit and separate bilge and circulating pumps, and the makers believe that it will meet the demand for engines of a trifle above medium weight, and will not be too heavy for boats from 45 to 60 feet that are now demanding an engine of about this power. The other models shown are a two-cylinder engine with 8-10 h.p., a four with 15-20 h.p., and a six with 75-80 h.p.

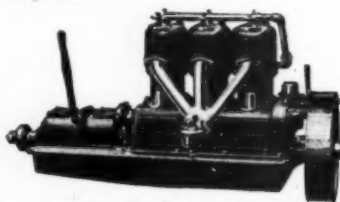
The Scripps Motor Company, Detroit, Mich., are exhibiting at both the New York and Chicago Shows. At New York they are displaying eight different models representative of their entire line. These models are their Scripps Midget, one of their extreme heavy-duty, four-cylinder models, a two-cylinder, Model L, similar to the motor which drove Detroit to St. Petersburg, Russia; a two-cylinder, Model M, 9-13-h.p., medium-duty; a four-cylinder, Model H, semi-speed motor, equipped with Rushmore electric starter; a four-cylinder, Model K, medium-duty, and a six-cylinder, Model E, semi-speed engine. Their New York representatives, the Bowler, Holmes & Hecker Company, are in charge of this exhibit, and O. L. Cosgrove & Company will represent them in Chicago where they will have a Midget, a Model L, Trans-Atlantic motor, and a four-cylinder, Model H, semi-speed motor.

The exhibits of the Sterling Engine Company, Buffalo, N. Y., at both Shows, are of more than usual interest, and will be well worth a visit. In addition to exhibiting their full line of regular models, they are showing, also, their 1914 model, medium-duty and speed engine rated at 20-35 h.p., with a bore and stroke of 4 3/8" x 5 1/2", with all gears enclosed in one housing at the rear of the engine. The high-speed engines are well represented by a model of their new 45-75 h.p. six and their special 1914 eight. They have also a 17-foot tender-de-luxe equipped with the Kid, but the most interesting of all is the big eight-cylinder mammoth, designed on new principles, built on new principles and filling a new requirement. The cylinder dimensions are 8 3/4" x 10", and there is not a single moving part in view, nor is there an exposed nut, and the action is said to be perfectly silent.

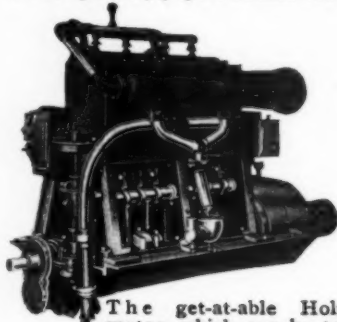


Single-cylinder Monitor motor.

Murray & Tregurtha Company, South Boston, Mass., are exhibiting at the New York Show only their heavy-duty and semi-heavy-duty engines. These engines are the same that they have had on exhibition before, except that they have received numerous little refinements of detail. This company makes it its endeavor to create an engine which is easily get-at-able in every respect, and yet as noiseless as possible.



Three-cylinder, 4-cycle Palmer motor.

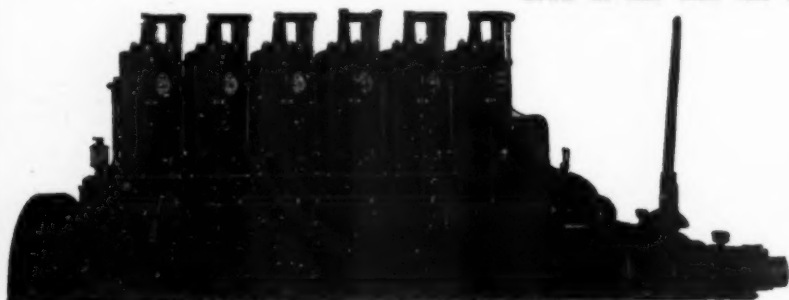


The get-at-able Holmes motor, which can be taken down in less than one minute.

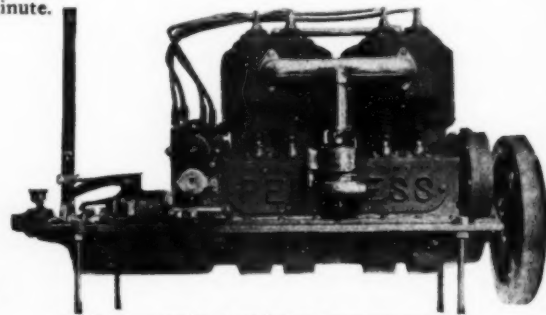
The Holmes Motor Company, of West Mystic, Conn., are showing at New York, one of their well known lifeboat cruisers, and in connection with this, a model of a launching device for putting these boats overboard from ocean liners. They are also showing one of their Model H, six-cylinder engines, and are introducing to the public for the first time their new 25-h.p., gearless, four-cylinder engine. This is a 4-cycle engine with Coventry noiseless chain drives for camshaft, magneto, water pump, etc. It has also an entirely enclosed ball bearing reverse gear of the Carlisle-Johnson latest type, and the engine throughout is of the highest grade construction for strictly first-class service, silent running with flexibility of control being the prominent features of this new gearless de luxe type. This model and the Model H will also be shown at the Chicago Show.

Palmer Bros., Cos Cob, Conn., are exhibiting nearly their complete line at the New York Show this year. Of the 24 models on exhibition, 12 are of the two-cycle type, and 12 four-cycle. Of the latter, types NL and NR are closed-base machines made in 1, 2, 3 and 4 cylinders with multiple disc clutch. Types F and K are similar with the exception that the valve chests are made in separate castings so that they can be removed and replaced in case of trouble without getting new cylinders. These motors are both jump-spark and make-and-break. They are lubricated automatically by means of an oil pump, and there are different supplies of oil for the base and clutch, the clutch running in its own supply of oil, which may be replenished when necessary. These motors may be fitted with friction-driven magneto, or the magneto may be driven by a gear off the camshaft.

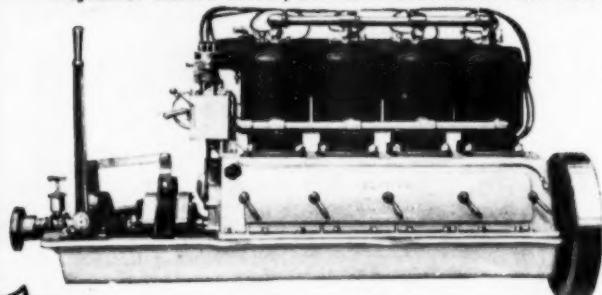
The Peerless Marine Motor Company, Buffalo, N. Y., are exhibiting at New York and Chicago the following models: Four-cylinder, 25-35 h.p. motor with cylinder dimensions of 5" x 6", with Joe's gear and electric starter and lighting plant; four-cylinder, 16-20 h.p., with cylinder dimensions of 4" x 6", equipped with Joe's gear; a two-cylinder machine of the same dimensions and half the power, also equipped with Joe's gear, and a two-cylinder, 12-16 h.p., bore and stroke, 5" x 6", with the same reverse equipment. The company have added a new engine in two sizes, making it now possible to secure a Peerless engine in a wide range of service. All wearing parts of this new model are extremely wide and heavy, and yet all useless metal has been cut away so that the engines are really very light. The cylinders are of the T-head type and cast in pairs, having large valves.



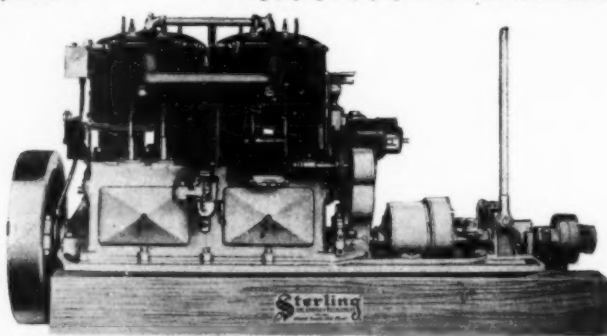
6-cylinder Ralaco motor, shown in addition to their new 1914 model.



16 h. p., 4-cycle, 4-cylinder Peerless motor.



4-cylinder Scripps motor. One of their complete line of 17 models.



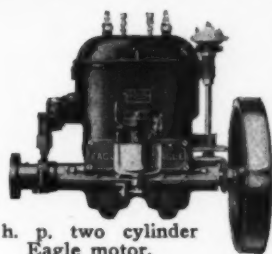
Heavy duty, 4-cylinder, 45 h.p., 6 1/2" x 9" Sterling motor.

The Motor Boat Shows

The Standard Motor Construction Company, Jersey City, N. J., are exhibiting this year at both Shows, 7 marine motors ranging in size from 10 h.p. to 150 h.p., and including two high-speed auto marine models, one generator outfit, and a Lundin type, Standard equipped lifeboat. This lifeboat will undoubtedly attract a good deal of attention, as it has a number of unusual features. Thirty-six feet in length, it is decked over fore and aft, is self-bailing, and is fitted with a wireless outfit, and enclosed wireless house. The propeller revolves in a tunnel stern and the bottom is absolutely flat. To aid in steering in a rough sea, a double fin is placed in the forward part of the tunnel. The fin is positively controlled by a gear and screw arrangement, and is designed to make the least resistance in the water, and, at the same time, withstand a heavy side pressure.

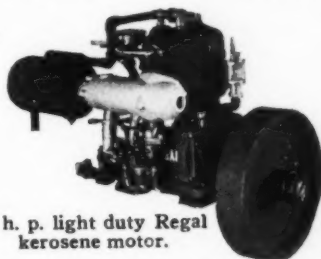
The Regal Gasoline Engine Company, of Coldwater, Mich., are showing at both New York and Chicago a line of light and heavy-duty kerosene engines and their 32 h.p. auto marine engine. The kerosene engines, which form a large part of the company's export trade, and are becoming also a factor in their domestic trade, deliver power per gallon of kerosene equal to that derived from an equal amount of gasoline, it is claimed. The 32 h.p. is the light, high-speed model which this company has manufactured for some time, but there have been some important changes in its construction. The oiling system now employed is a combination of force-feed and splash, allowing the motor to be placed at any reasonable angle without danger of injury from deficient oiling. The muffler and exhaust pipe are water-cooled, and one of the claims made for this engine is that you can place your hand on any portion of it without discomfort.

The Standard Company, of Torrington, Conn., are displaying at the two Shows, in all, 16 models of their comprehensive line of ma-

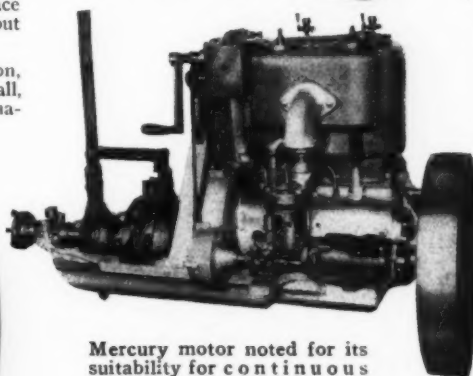


7 h. p. two cylinder Eagle motor.

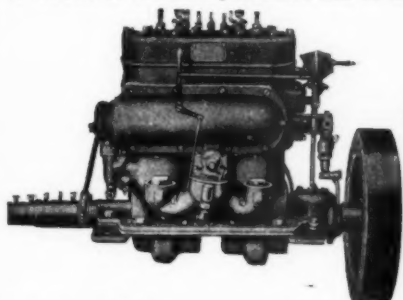
rine engines. The leader of these, perhaps, is Model 2-O, the 1914 addition to their line, which has exceeded their highest expectations in tests both at the factory and in open sea work. Models O, 2-O and 2-K are fitted with Sumter J. S. magnetos, while their Model R is fitted with a Sumter M. & B. magneto. These magnetos are all attached to the engine with brackets, are gear-driven at engine speed, and the notable feature about them is that batteries for starting are unnecessary, as the engine can



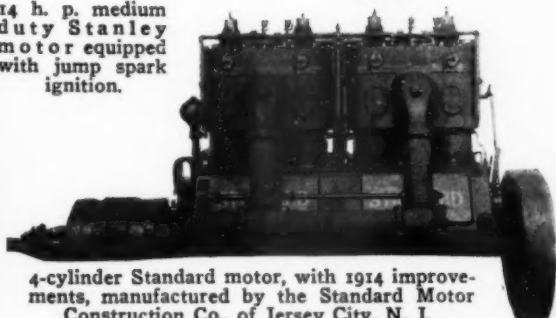
3 h. p. light duty Regal kerosene motor.



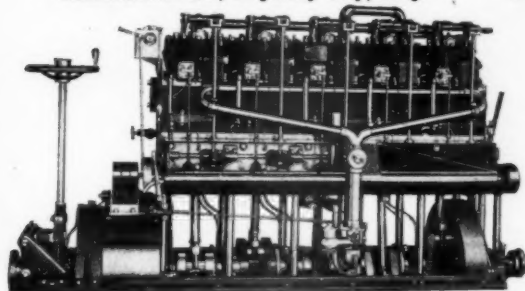
Mercury motor noted for its suitability for continuous work.



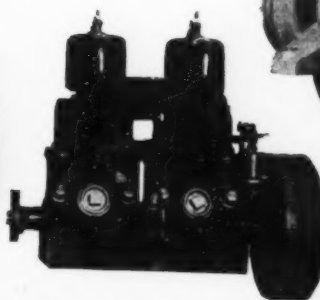
14 h. p. medium duty Stanley motor equipped with jump spark ignition.



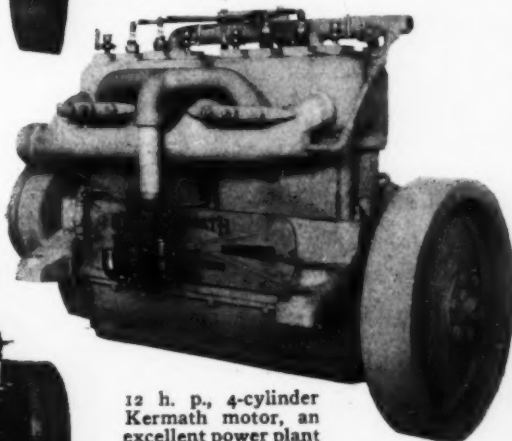
4-cylinder Standard motor, with 1914 improvements, manufactured by the Standard Motor Construction Co., of Jersey City, N. J.



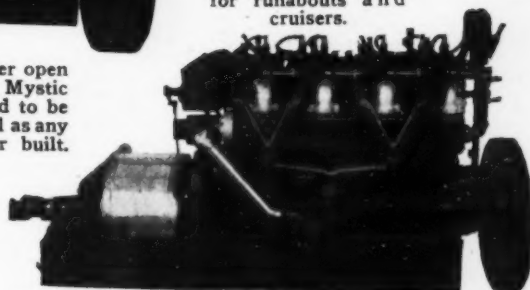
5-cylinder Murray & Tregurtha engine, brought up to date, and noted for its reliability.



New 2-cylinder open base, 2-cycle Mystic motor claimed to be as economical as any 4-cycle motor built.



12 h. p., 4-cylinder Kermath motor, an excellent power plant for runabouts and cruisers.



Well known 4-cylinder Lamb motor, to which line several new models have been added this year.

be started from the standstill on the magneto. While these engines are designed to operate on gasoline, the company is prepared to supply a kerosene outfit which has proven very satisfactory. Paragon gears are attached to several engines.

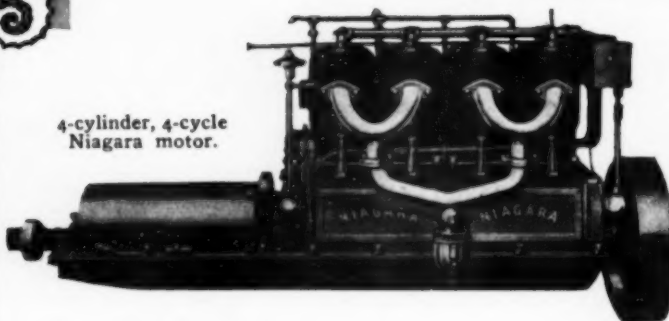
The Stanley Company, Salem Mass., are exhibiting at the New York Show a full line of their motors from 3 to 15 h.p. inclusive, both make-and-break and jump-spark in single and double cylinders. These motors, which are all of the two-cycle type, are sold with or without full equipment, but a saving in price is effected by ordering full equipment to accompany the engine. This equipment consists of salt water propeller outfit, including bronze propeller, Tobin bronze shaft, stuffing box lag screws and nuts, battery outfit, and pipe and fittings for gasoline. As an extra, a Stanley reverse gear is provided, built into the motor. All these motors have had some minor changes for 1914 which will not only tend to improve the running qualities, but also the wearing qualities.

The Lamb Engine Company, Clinton, Ia., are showing at New York and Chicago, in addition to a cruiser with one of their new four-cylinder, medium heavy-duty engines installed, a complete line of this type of engine in two, four and six cylinders. The four and six are new models this season. There has been such a demand for this type of motor in larger sizes than the 15 h.p. two, that the Lamb people have extended their line to a four and six in the same bore and stroke. They are also showing a four-cylinder, medium-duty motor, 5 1/4" x 6" cylinders, 24 h.p., of the same type of engine that they have had on the market for several years. The list of their models at the Show is completed with the mention of a four and a six-cylinder, heavy-duty motor with cylinder dimensions of 6 3/8" x 7", and a new high-speed model in four cylinders with electric starter.

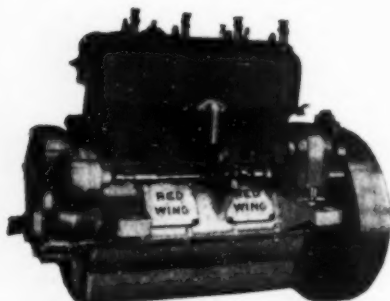
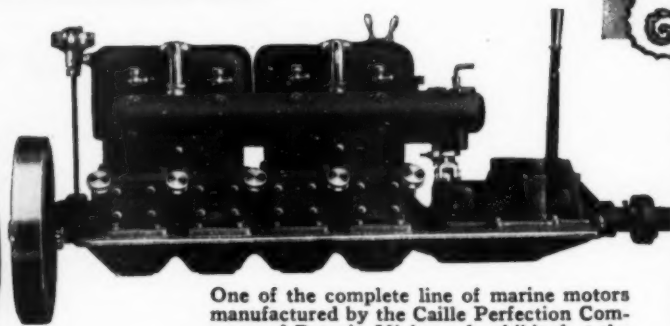
The Kermath Manufacturing Company, Detroit, Mich., have, at New York, one of their 12 h.p. Kermath motors sectioned out so as to show all the working parts. This is set on a four-post stand five feet high, so that it may be readily inspected; it will be electrically operated. Something new in their line is a 2-cylinder, special four-cycle yacht tender motor of 5 to 6 h.p., 3 1/2" x 4". The cylinders are finished in gray enamel; the water manifolds and valve plugs are polished brass, while the fly-wheel is finished and polished all over and heavily brass-plated.

The Motor Boat Shows

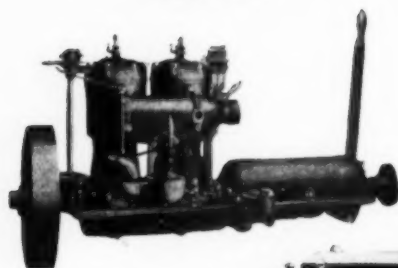
4-cylinder, 4-cycle
Niagara motor.



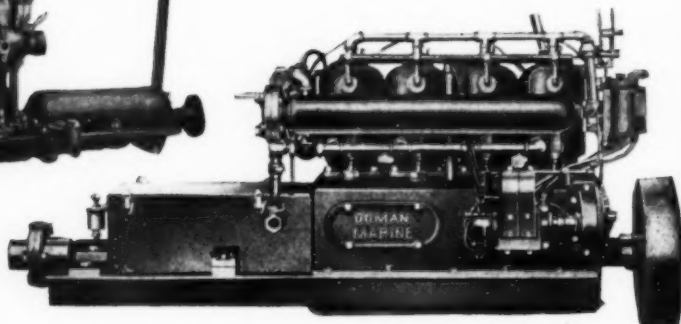
One of the complete line of marine motors manufactured by the Caille Perfection Company, of Detroit, Mich., and exhibited at the New York and Chicago Shows.



4-cylinder, 4-cycle, L-head Red Wing motor, developing its power at high speed.



One of the 11 models manufactured by the Ferro Machine and Foundry Co., of Cleveland, Ohio.



4-cylinder Doman motor, manufactured by the H. C. Doman Co., of Oshkosh, Wis.

The H. C. Doman Company, Oshkosh, Wis., are exhibiting at the New York and Chicago Shows practically their complete line of marine engines, including the medium-duty, high-speed and heavy-duty motors. In the medium-duty class there are nine motors, ranging from a two-cylinder, 6 h.p. machine to a six-cylinder engine of 45 h.p. There are three high-speed motors, and, of these, their Model 10 of 25-35 h.p., with cylinder dimensions of 5" x 6", is the smallest. The next in size is a six, developing 40-50 h.p. at 700-900 r.p.m., and the largest is a 55-75 h.p. six, with bore and stroke of 6" x 6", turning over at the same speed. Of the heavy-duty motors, the 16 h.p., two-cylinder is the baby of the family. This motor, fully equipped and with salt water fittings, sells for \$1,190. The sizes range up from this machine to the 60 h.p., six-cylinder engine which sells for \$3,420, fully equipped. All these motors are of the four-cycle type.

The Hartford Suspension Company, Jersey City, N. J., are confining their exhibit at the New York Show this year to their Hartford Electric Lighting and Starting System, which is being used on motor boats as well as automobiles. This system is composed of but six lightweight parts, all of which, however, are of rugged construction. The operation of this device is as follows: A short lever is depressed, and at its first movement of travel starts the electric motor spinning at a high speed. By the time the lever has been depressed so that the driving mechanism is engaged with the gasoline motor, the starter is turning over several thousand r.p.m., and there being a fly-wheel attached to the electric motor enough energy is stored in it, added to the torque of the motor, to turn over the heaviest engine 150 r.p.m., the gear reduction being 75 to 1.

The Ferro Machine & Foundry Company, of Cleveland, Ohio, are represented at the New York Show by a complete line of their marine engines, there being 11 models ranging in size from 3 to 25 h.p., with a combination of reverse gears, Bosch high tension magnetos and Ferro rear starters. The Ferro line for 1914 consists of 3, 4, 5½ and 7½ h.p. motors in single cylinders; 6, 8, 11 and 15 h.p. in two cylinders, and 12, 17 and 25 h.p. in three cylinders. The prices range from \$60 to \$500. All models are fitted with jump spark ignition, and Bosch high tension magnetos are furnished at additional charge. The Ferro exhibition is under the management of Mr. Von Culin, who is now salesman for the Consolidated Gas & Gasoline Engine Co., New York, who have recently been appointed New York distributors for the Ferro Company.

The Caille Perfection Company, of Detroit, Mich., whose exhibit at the New York Show is handled by the E. J. Willis Company, New York, will also exhibit at Chicago. Their line of marine engines is an unusually complete one and consists of the following models—2, 2½, 3½ to 4 and 6 h.p., single-cylinder type, 8 and 14 h.p., two-cylinder type, 12 h.p., three-cylinder, 30 h.p., four-cylinder, 8 h.p., two-cylinder, and 16-18 h.p., four-cylinder unit power plants, 8 h.p., single-cylinder and 18-20 h.p., two-cylinder heavy duty engines. The Caille line is so well and favorably known that it is hardly necessary to comment on it. However, the company state that they have laid their plans so as to take care of a larger volume of business in 1914 than they did in 1913, although 1913 was by far their largest year. No material changes have been made in their motors, but by adding a lot of improved machinery to their already well equipped plant they state that it has given them one of the best equipped engine plants in the country. Their careful system of testing and their liberal guarantee will be continued.

The Niagara Motors and Manufacturing Company, Dunkirk, N. Y., are displaying a number of their models of marine engines at the Garden. Niagara motors are all of the 4-cycle type, and range in size from 5 h.p. to 65-90. There are two two-cylinder models and two sixes, the others in the line being four-cylinder engines. All models except the twos are built with either iron or aluminum crank case, and the lighter machines of the same bore and stroke are rated at about 50 per cent. higher horsepower than the engines having iron base and crankcase.

The Red Wing Motor Boat Company, Red Wing, Minn., will exhibit one of their Thorobred motors at the Chicago and Toronto Shows. This motor, which has been described before in these pages, is a monobloc, four-cylinder, four-cycle, L-head machine delivering its power at high speed. The motor is designed throughout with a view to compactness and simplicity, yet allowing the greatest degree of accessibility and provision for necessary adjustments. The lubricating system is of extreme simplicity and as worked out in this motor attains a high degree of efficiency. Liberal water jackets keep the motor cool under most trying conditions. In every part of the motor there is evidence of extreme care in

selecting material best suited for the service which it is called upon to perform.

The Water Craft Company, of New York, have a very complete exhibit in two sections at the New York Show. They are displaying in Block "A" their Dandy Dink powered with a two-cylinder Brownie engine made by the Brown Gas Engine Company, of Schenectady, N. Y., for whom they are the New York agents. The propeller equipment is a 12" special Roper safety propeller outfit. They also have a full line of Wisconsin Valveless engines made by the Wisconsin Machinery and Manufacturing Company, of Milwaukee, Wis., including their full line of detachable row-boat motors. The full line of Brown engines is shown and a complete line of Roper propeller wheels and safety couplings. In addition, they are exhibiting a full line of their new solid propeller wheels put out under their own name in two types, namely, the Shamrock and the Harthorn. They are showing in their balcony extension a line of auto boat tops, spray hoods, Kapoc pillows and cushions manufactured by the Theo. H. Masten Company, New York, and a new reverse gear, besides many other accessories.

The Gasoline Engine Equipment Company, New York, are exhibiting at the New York Show complete lines of Van Blerck and Stanley motors and a Reliance 20-foot speed boat powered with a Van Blerck motor. The Van Blerck line as shown consists of one two-cylinder, medium duty motor of 14 h.p., and the same motor in four and six cylinders; high speed motors in four, six and eight cylinders with bore and stroke of 5½" x 6" and respective horsepower of 50, 100, and 130, and their mode. A4, also a high speed motor. Stanley 2-cycle motors in 3, 5 and 7½ h.p., single cylinders are shown, and 6, 7, 10, 14 and 15 h.p. in two cylinders. They have also a 1½ h.p. Cady 2-cycle canoe motor, as well as a four-cylinder, 4-cycle 4½" x 5½" unit power plant manufactured by themselves.

The August Metz Iron Foundry and Machine Company, of New York, are showing a number of their Metz & Weiss marine engines at the New York Show, a 6 h.p., horizontal engine and an M. & W. reverse gear in section. Of the marine engines the largest is a 100 h.p., direct reversible oil-burning motor. Then there are a 22 h.p., three-cylinder motor, a 10 h.p., two-cylinder motor, and a 3½ h.p., single-cylinder machine, all fitted with M. & W. reverse gear.

The MOTOR BOAT SHOWS



Maxim silencer, exhibited by Wilcox-Crittenden & Co., of Middletown, Conn.



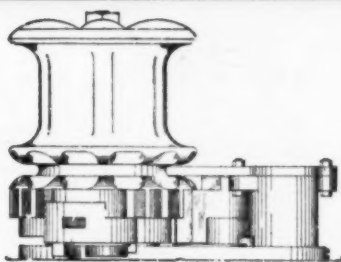
Paragon reverse gear, built by the Evans Stamping & Plating Co., of Taunton, Mass.

The Bosch Magneto Company, New York, have on display at the New York and Chicago Shows a number of new accessories, in addition to their well known line of ignition specialties. Their magnetos, which have been used with considerable success during the past season on fast boats, are on display, and a number of styles of spark plugs. This make of plug has become almost as prominent as Bosch magnetos. Maple Leaf IV, the fastest motor boat in the world, used them in the B. I. T. races. Then there is the Bosch spark plug hood, which is a statite cover fitted over the standard plug, making it as well as its electrical connection impervious to water or moisture. One of the latest specialties perfected is the Bosch press-button key-switch. This supersedes the Bosch spring plunger and key-switches. In addition to these accessories, there still remain Bosch cable, flexible couplings and oilers, with many other novelties as well.

The Aplco electric lighting system exhibited at the New York Show by the Apple Electric Company, of Dayton, Ohio, has undergone no important changes during the year, it having been felt by the manufacturers that a high degree of perfection has already been attained. The Aplco equipment, apart from the lamps, consist of three features—dynamo, storage battery and controller. As exhibited, this equipment is laid out as if it were installed in a boat. The independent lighting system for large yachts, consisting of gasoline motor and direct-connected dynamo, is also shown. Another exhibit is their self-starter, which is here shown for the first time, arranged for marine installation.

The A. S. Campbell Company, Boston, Mass., are displaying at the New York and Chicago Shows their complete line of motor boat electrical specialties, and, in addition, will make a demonstration of the Cello metallic hot-water bottle. This is a simple canteen-shaped, flat, convenient bottle, made of the very best tempered metal, 75% of which is copper, and it is beautifully nickel-plated. The claims made for this bottle are that it is absolutely indestructible, that it fits every part of the body, and emits a dry, healthy heat. One of the well known specialties produced by this company is their Cello searchlight, which is guaranteed to do the work on six dry cells. It is said of this light that its rays are so powerful that type of the size used on this page can be read by a person a thousand feet removed from the light.

George B. Carpenter & Co., marine outfitters, of Chicago, Ill., will exhibit at the Chicago Show a representative line of motor boat accessories and marine hardware. The accessories carried by this concern range from cup hooks to bathtubs and back through engineers' outfits and clutches to spark plugs. The leader of their very elaborate exhibit, however, is a new steerer which they are putting on the market this year, and with which they have had very marked success. This steerer has some very excellent features incorporated in its design.



Durkee's Andrade automatic windlass.



Auto steerer built and exhibited by Wilcox, Crittenden & Co.

Wilcox, Crittenden & Company, Middletown, Conn., are showing at the Garden, a representative line of marine hardware, boat fittings, etc. One of their leaders is the Maxim marine silencer, which works on the same principle as the famous Maxim gun silencer. This silencer, which is made in a number of sizes for various motors, is guaranteed to completely silence the exhaust. Briefly, the silencer consists of four concentric rings, into the smallest of which the exhaust gases discharge. The cylinders are so designed that the gases must change direction each time they enter a larger cylinder. Thus, their force is dissipated by the time they reach the largest cylinder and the outlet passage. Another leader of this company's line is the Auto Boat Steerer, and there are devices of all kinds to meet every need of the motor boatman.

Chas. P. McClellan, of Fall River, Mass., is exhibiting this year at the New York Show his line of patented auto boat tops, life-preserving cushions, spray hoods, etc. The spray hoods are of simplified construction, and the tops, which are of the one-man variety, can be raised and lowered without detaching any part. The tops, which are waterproof and very serviceable, add to the appearance of any boat to which they can be applied.

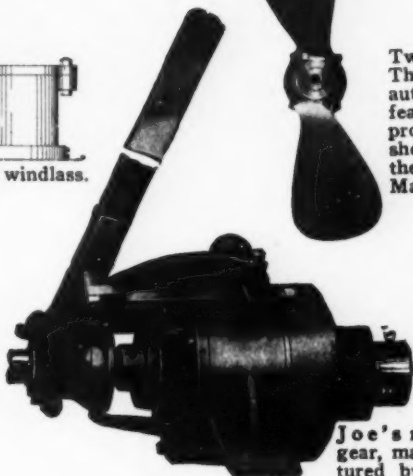
The Union Stove Works, of New York, manufacturers of a line of stoves, ranges and furnaces, have taken space B-4 in the balcony extension at the New York Show, where they are exhibiting a line of coal stoves for boats under the name of "Eight Bells."



Mea magneto manufactured by Marburg Bros., of New York.



Two blade Thompson automatic feathering propeller, shown by the Noyes Machine Co.



Joe's reverse gear, manufactured by the Snow & Petrelli Mfg. Co., of New Haven, Conn.

The David B. Crockett Company, Bridgeport, Conn., makers of fine varnishes, occupy a space in the balcony section of the Garden where their sales force is in attendance for the purpose of displaying their line and entertaining customers. Among the many varnishes, fillers, interior finishes, etc., made by this company, perhaps the marine varnish known as Spar Composition is the best known. It is claimed for Spar Composition, which has been on the market fifty years, that it is unequalled for outdoor work, and that it will not spot, crack, blister or scale. Other well-known items in this line are No. 1 Preservative, an excellent interior finish; No. 2 Preservative for a high gloss finish over No. 1, Spar One Coat Finish, a quicker drying varnish than Spar Composition, Waterproof Floor Varnish, Bathroom Finish, Enamel Finish, etc.

Marburg Bros., Inc., New York, are showing at the New York Show, their line of magnetos, SRO ball bearings, and their new Marburg-Lucifer electric lighting outfit driven from the fly-wheel, but the item of most interest to motor boatmen is their latest type of magneto with a stationary housing, which is said to be absolutely waterproof. This instrument is now produced in various sizes suitable for four-cylinder and six-cylinder motors. It has a stationary housing, inside of which is shifted the bell-shaped magnet, carrying with it the timing mechanism, thus conforming absolutely to the more widely known cradle type of Mea magneto. For motor boats the extra precaution against water is of particular value, and it is of interest to note that this type of Mea is largely used on European aeroplanes and motor boats, a boat equipped with one of them having won the German Emperor's Jubilee Motor Boat Races on Mueggel Lake.

The Snow & Petrelli Manufacturing Company, New Haven, Conn., as in former years, are exhibiting their gears and one-way clutches at the New York Show. Joe's gears are for all types of boats from the lightest pleasure boat to the big, heavy fishing boat, or the fastest speed boats. Joe's safety rear starter is also made by this company in two sizes up to 40 h.p. Larger ones than this can be made on order. These starters are equipped with a non-kick-back positive release and are furnished with frame or bulkhead bracket as desired.

W. & J. Tiebout, New York, are displaying at the Garden a number of marine accessories from their complete stock, among them being their "Star" air compressors and bilge pumps. The Star air pumps are especially handy things as they are not difficult to install, consume little power, and make it possible to have an efficient horn. These pumps are made in several styles, there being one which is driven by friction off the flywheel and another by a cam on the crank-shaft, the cam and fastenings coming as part of the equipment.

The Motor Boat Shows

The W. S. Hall Company, of Rochester, N. Y., are displaying at New York a complete line of their well known "Reliance-Rochester" steering gears, both of the auto and cruiser types. The display consists of one of the popular scored drum types with fore and aft and regular controls; the maple drum with fore and aft controls, chain and sprocket, rack and pinion, and their styles "G" and "H" "Baby-Reliance." These styles are for small cruisers, etc. The "Unit Control" will also be displayed. This is a concentrated cruiser control. It centralizes the control of the steering, reversing and spark and throttle. A new scored drum cruiser control will also be exhibited.

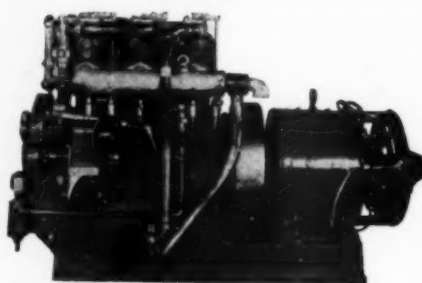
The Columbian Brass Foundry, of Freeport, L. I., have added to their well known line of Columbian propellers a new model known as the Ailsa Craig. This three-bladed wheel, made in even sizes from 12" up to 50", has as the greatest width of the blade up to 36", 40% of the diameter, while the width of the blades for the larger sizes is 33 1/4% of the diameter. The Ailsa Craig propellers are guaranteed by the makers to be true screw and accurate as to pitch, while it is claimed that the workmanship and materials that go into them are unexcelled. The prices and discounts are the same as for styles A and G, three-bladed propellers, which this concern already has on the market. While this new propeller is their leader at the two Shows, the Columbian Company are also exhibiting their complete line of propellers, bronze rudders, etc.

The Edison Storage Battery Company, of Orange, N. J., are exhibiting at both the New York and Chicago Shows a representative line of their storage batteries for use on motor boats and motor yachts. One of the features of these batteries is their lightness and compact appearance. With every battery sold by the Edison Company goes a guarantee that, at the expiration of four years, it will still be capable of developing its rated capacity.

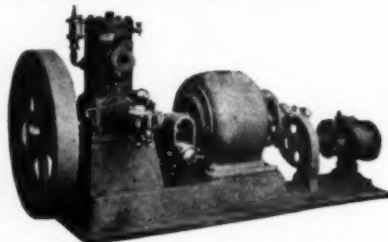
The Hyde Windlass Company, Bath, Me., are displaying at the New York and Chicago Shows their regular Hyde Turbine Type propellers. The manufacturers ascribe the success of these propellers to the fact that they are built on the true-screw principle, made from metal patterns accurately balanced, hand filed to remove all surface irregularities, and then polished. They have large blade areas, and are, therefore, particularly efficient in attaining the highest speed and also give the best results when used in connection with heavy-duty engines. Manganese bronze of the highest tensile strength is used exclusively in these propellers. It is the same metal that the manufacturers have used for the past 18 years in propellers furnished for navy ships and the merchant marine. It is guaranteed to meet government requirements for manganese bronze.

The Cape Cod Power Dory Company, of Wareham, Mass., who are exhibiting at the New York Show, make a specialty of three or four boats which are noted for their seaworthiness. One of these is a 28-foot cabin cruiser which for its length combines a great many advantages. The design is so laid out there are sleeping accommodations for two, toilet, sink, oil stove, running fresh water, tool, dish and clothes lockers, and an ample cockpit as well. A few of the other boats put out by this company are U. S. Volunteer life-saving dories, a 16-foot lake and river boat, a 20-foot special motor dory, and shallow draft rowing skiffs in 10, 12, and 14-foot sizes, the last of which is especially adapted for out-board motors.

Byrne, Kingston & Co., of New York, are exhibiting in one of the balcony reservations at the New York Show, and at Chicago as well, a full line of their ignition specialties, consisting of magnetos, coils and spark plugs. A demonstration magneto, which, on being revolved by hand, shows the strength of the spark at the plugs, is shown. They are also displaying, and for the first time, a new carburetor which has been especially de-



3-cylinder, 7 K. W. Seabury generator set.



A Fay & Bowen lighting unit.



Out-board rudder shown by the Columbian Brass Foundry.



Mechanical Devices Co.'s compression coupling.



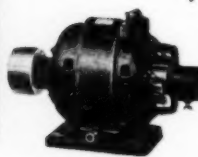
New Perflex All-In-One spark plug.



Sharp spark plug sold by Chas. E. Miller & Co.



A piece of T & C tiller rope



Lighting outfit manufactured by Hector McRae of Baltimore.

signed to work on kerosene. A number of the marine engines exhibited at the Shows are equipped with these carburetors.

Chas. E. Miller, New York, is displaying a number of accessories at the New York Show which will be of interest to boating people. One of these, the Warren Auto Control Steerer, is made with controls fitted fore and aft, thus doing away with spiral connecting rods and bell cranks. Control levers are located in the wheel, which enables the operator to have complete control of the boat. Other items are the Crone gasoline mixer which is said to save from 25% to 50% of gasoline; the Crone valve dresser and reseater; Withersbee storage batteries; Sharp spark plugs, and Miller's Pan-American lubricants, besides many other accessories.

The Tucker & Carter Rope Company, New York, whose sole exhibit at this year's New York Show is their T. & C. tiller rope, announce that the worth of this rope is demonstrated by the annual increase in its sales. This waterproof linen-braided tiller rope, containing bronze rope center, is made of the best grade flax yarn, which is waterproofed before braiding, thereby insuring a thoroughly waterproofed rope throughout. The bronze rope core is made to a special analysis both for strength and flexibility and will neither shrink, rust nor stretch. It needs no further attention after being adjusted, and it is claimed for it that it will stand up beside any other known material under the same working conditions. It is made in all sizes from 3/16" up to 7/16" outside diameter, and is put up in coils of 1,000 feet each.

The Electric Goods Manufacturing Company, Canton, Mass., are exhibiting this year, at New York, several new models of Perflex ignition equipment for 1914. In addition, they have a new model of the Perflex All-In-One which is sold at an advance in price over the previous model. Of particular interest is the new "Master All-In-One." This has three connections for primary winding. It contains an auxiliary magnet which operates the vibrator, and, as its name implies, it is a combined All-In-One and Master Vibrator. It is intended for use in connection with the Perflex ignitor, and will, itself, operate one cylinder while the little igniters operate the other cylinders on a multi-cylinder engine of any size. For marine engines this combination will be very convenient and economical.

The Milwaukee Yacht and Boat Company, of Milwaukee, Wis., are among the exhibitors at the Chicago Show. This concern builds a number of stock runabouts and the work on them is all of the best. One of these, the Milwaukee 33-foot runabout, has a beam of 5 feet 6 inches and is a good stiff boat, seaworthy and comfortable. It is heavily constructed and divided into three watertight compartments, it being made with two watertight bulkheads. Powered with a six-cylinder, 75 h.p. motor, a speed of 26 miles an hour is guaranteed, and less power can be installed if speed is not a desideratum. The 26-footer which they put out embodies the same details of construction as the large boat, and with a 30 h.p., four-cylinder motor attains a speed of 18 miles an hour. A 25-footer is gotten out for those who want a less sumptuous boat than the above two, but who desire Milwaukee quality. This boat with a smaller motor has a speed of 14 miles. Two other models are shown.

Bruns, Kimball & Co., New York, are handling a number of lines of marine engines at the New York Show. Among these are the Sterling, Eagle, and Kermath. In addition to selling these engines this company does a big business in buying and selling second-hand motors. It looked to the company at one time as if they would have to discontinue their policy of taking used motors in part payment for new ones, as an immense stock had been accumulated, but the opening of their branch store at Philadelphia provided an outlet for these rebuilt machines, and the policy is continued without reservation. Accordingly, at the Show, the man who wishes to trade in his engine will be well cared for.

The MOTOR BOAT SHOWS

The Curtiss Aeroplane Company, Hammondsport, N. Y., is exhibiting at Madison Square one of the new Curtiss Flying Boats. There have been numerous refinements to this craft since it was first put on the market, and the latest model sees the boat equipped with wide mahogany hull with double cockpit. Its most striking departure from previous models lies, however, in the double V bottom. There is a V at the bow designed to eliminate the bow wave by affording an easy entrance when the boat is running in the water; and a V bottom at the step, giving an easy entrance when the boat descends to the water from above. The boat on exhibition is, of course, equipped with a light-weight Curtiss motor. These motors are said to have more power for weight than any other made.

The Texas Company, of New York, have an extremely interesting exhibit at the New York Show, and the feature of their booth is a unique star-shaped stand for displaying their line of high-grade oils. The star itself is of glass with a brass border, and on its face in small electric bulbs, the word, "Texaco" and the letter "T." Around the border of the star are a series of diverging rays, which are nickel-tipped glass bulbs filled with various colored oils, ranging from a nearly water-white to a deep red. Behind the star is a white ground-glass shield, in back of which are electric lights and powerful reflectors. The whole effect when fully illuminated is very striking. This stand also has its useful side, for any of the firm's representatives can place his hand on the particular grade of oil which he desires to show and by removing the glass container enable his customers to get a closer view of the oil.

The Smith-Serrell Company, Inc., New York, are showing, at the Garden, Francke flexible couplings in all sizes for motor boat use suitable for any shaft up to 4" in diameter. They are also illustrating their line of hydroplane couplings of the light-weight, all-steel type, suitable for shafts up to 2 1/2" when carrying such heavy powers as are usually met with in hydroplane work. They have eleven different cast iron motor boat couplings suitable for the ordinary motor boat, and five of the steel couplings for hydroplanes. An exhibit of especial interest is their demonstration rig, showing the exact difference in friction between an ordinary rigid coupling and a Francke flexible coupling when applied to propeller shafts.

Edward Smith & Company, of New York, are demonstrating the merits of their well-known marine varnishes, Spar Coating and Marinite at the Garden Show this year. Spar Coating is a fine finish for spars, decks, deck-houses, and all woodwork exposed to the violent attacks of the weather. The booth which this company has occupies two spaces in the gallery, and is designed to represent a marine scene. With a lighthouse flashing its signal in the background, and a working model of a cabin cruiser plowing the waters of a harbor in the foreground, it is a very realistic scene. The two varnishes mentioned above are also shown on a number of beautiful mahogany panels.

Morris M. Whitaker, N. A., Nyack, N. Y., will be at the Chicago Show with full lines of blueprints and photographs of boats of his design, so that prospective customers will be able to judge for themselves of what he has done and what he will be able to do for them.

C. D. Durkee & Co., New York, are on hand at both the New York and Chicago Shows with a representative line of marine hardware and things for the motor boatman. In spite of their recent fire, the Durkee stock is one of the largest to be found, and the exhibits from it are well chosen. The well known Reliable fire extinguisher is to be seen, and the Andrade automatic windlass which, by the mere moving of a handle bar heaves in, lets go, or brakes; other features are the Patterson trap ventilator which permits the free and unrestricted entrance of pure air into the boat, and is yet so designed that water cannot come in;



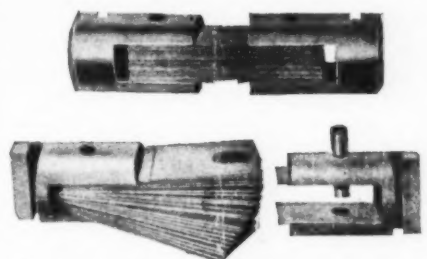
Launching life boat device of the Marine Efficiency Company



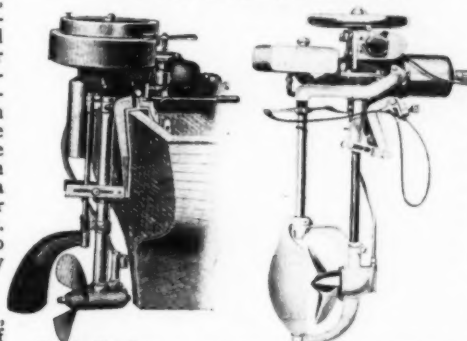
Thompson propeller.

Wisconsin detachable motor

Carlyle-Johnson reverse gear.

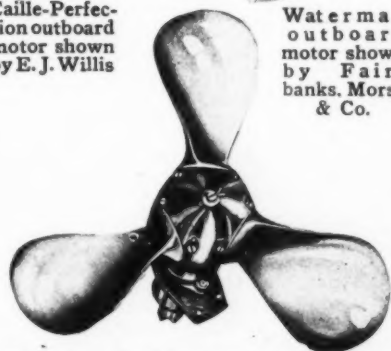


Flexible pins used in the Francke coupling, exhibited by the Smith-Serrell Co.



Caille-Perfection outboard motor shown by E. J. Willis

Waterman outboard motor shown by Fairbanks, Morse & Co.



Wilmarth & Morman reversible propeller.

and the Crescent ball-bearing anchor which can be had in weights from 5 to 300 pounds.

The Gray-Hawley Company, Detroit, Mich., will make a complete display at the Chicago Show of their air compressors and whistle outts, spark, throttle and reverse controls, filters, mufflers, fog bells, combination telescoping flag poles and aft lights, and special fittings of various kinds.

Chas. H. Gillespie & Sons, Jersey City, N. J., are at the Garden this year with their line of Monarch varnishes. Monarch Spar is used and has been used for a number of years by some of the largest steamship companies leaving American ports, and the makers state that it does not require a midsummer refinishing, as it withstands atmospheric changes; is sun and waterproof, and holds its luster an unusual length of time. Monolac, in colors, is another preparation, especially made for interior woodwork of motor boats, and Monarch engine enamel, which has the faculty of making old engines look like new, is made in all the principal shades. Monarch Bull Dog paint and varnish remover cream is a slow-drying, non-evaporating remover that the makers state works instantaneously. At their booth this company will give away a gasoline gauge which is very useful and practical.

The Janney Steinmetz Company, of New York and Philadelphia, are exhibiting their seamless gasoline tanks of various sizes, air tanks and air starter tanks, as well as numerous ideas and developments in the art of cold drawn steel. Among these, one feature is known as the Steinmetz patent reserve compartment, contained entirely within the tank, so that there is no trouble through leakage, and as the reserve tank automatically fills itself as the tank is filled it can not be forgotten. The beauty of this reserve tank is that it will supply the boatman with enough fuel to get to a supply station if the main tank runs dry.

The Wilmarth & Morman Company, of Grand Rapids, Mich., are showing a full line of standard propellers at Chicago, and two or three reversing propellers for which special advantages are claimed. Of their W. & M. heavy-duty reversing propeller the company says that a large number have been used during the past season on tug boats, ferry boats and large fishing boats with the utmost success. Two boats used for carrying dynamite are equipped with these propellers, and, although they are in the water the year round, the propellers have given very efficient service.

Valentine & Company, New York, have on exhibition at the two Shows as their leader this year as in years past, Valspar, "the varnish that won't turn white." This spar varnish is well known to motor boatmen, and some of the qualities and superiorities claimed for it are as follows: It positively will not turn white when exposed to rain or moisture, salt or fresh water; it dries dust free in two hours, and hard overnight in any temperature; it becomes hard enough to walk on in 24 hours, and will not chip, crack, peel, or scratch white; it is not injured by washing with soap and water; it is pale and brilliant when first applied and wears bright.

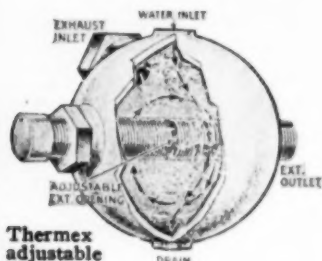
The Pyrene Manufacturing Company, New York, have on display at the New York and Chicago Shows their Pyrene fire extinguisher, together with various types of brackets for attaching the container to walls or bulkhead. Pyrene is a combination of powerful non-poisonous gases in liquid form which when directed on a burning surface blanket the flame. Demonstrations of how Pyrene subdues a flame, and of how by reason of its non-conductivity it can be played on an un-insulated electric circuit are made.

L. O. Koven & Brother, New York, are showing at both New York and Chicago a line of their tanks, mufflers and underwater exhausts. Their tanks are known by the firm name and are made for every conceivable purpose to which they may be put aboard a boat, including compressed air tanks and receptacles for gasoline, kerosene, lubricating oil, and fresh water.

The Motor Boat Shows



Monarch carburetor for all types of motors.



Thermex adjustable muffler



Willis sailing lights.



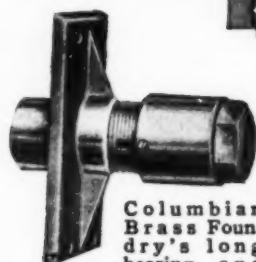
Electric speed indicator, manufactured by the Electric Tachometer Co., of Philadelphia.



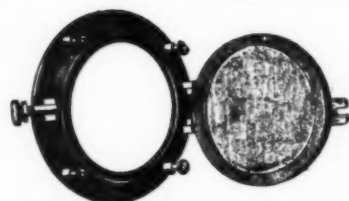
Evinrude detachable row boat motor.



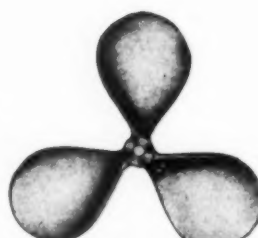
Switch boards shown by the E. J. Willis Company.



Columbian Brass Foundry's long bearing and stuffing box.



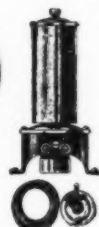
E. J. Willis' new "Mitchell" port light.



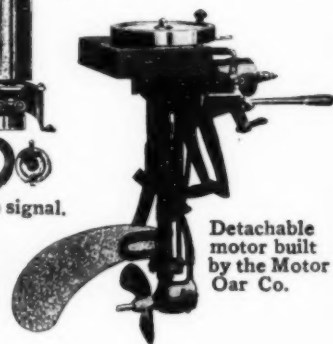
Hyde propeller wheel.



Intermediate bearing of the Mechanical Devices Company.



Wilco signal.



Detachable motor built by the Motor Oar Co.

The Electric Tachometer Company, Philadelphia, Pa., are displaying at Space 19, at the New York Show, a complete line of tachometers manufactured by them. For all marine service, these instruments are equally serviceable for high and low-speed engines. The system is electrical, permitting the indicator to be placed in any desired location on a boat. It is possible with their system to operate more than one equipment from one generator, as in the case of their Navy Type they have instruments placed in the engine-room, pilot-house and bridge. The instruments can also be furnished to read ahead and astern, serving, in this instance, as a check between engineer and pilot.

The Evinrude Motor Company, of Milwaukee, are showing at both the New York and Chicago Shows an interesting exhibit of the Evinrude detachable rowboat motor attached to canoes and rowboats of all descriptions. This year the Evinrude motor is improved by the installation of a built-in reversible magneto with Bosch plug. The magneto adds nothing to the weight of the motor, as it is contained in the fly-wheel. Another advantage of this location is that the magneto is so constructed that rain, waves and moisture will not affect it. It is said that it will even continue to give current when completely submerged. The magneto has no brushes, bearing or commutators, and, in fact, has but one moving part. As most people know, the Evinrude is not equipped with a rudder, as it has been found that the boat to which it is attached turns very readily by merely turning the propeller in either direction. The Evinrude is made in 2 and 3 1/4 h.p. sizes.

The Monarch Valve Company, Brooklyn, N. Y., are displaying at the Garden a complete line of their gas engine specialties which includes carburetors, check valves, stuffing boxes, etc. Their Monarch Standard carburetor differs this year somewhat from their previous years' models, although no radical departure in construction has been made. All carburetors now manufactured by them are supplied with an improved

form of needle valve and lever connecting it with the float. This needle valve extends through the cap, and is thus firmly guided at top and bottom. It is claimed for this new construction that it prevents any remote possibility of leaking or flooding. Magnetos, spark coils, air valves, pump suction connections and many other devices are also found in this line.

The E. J. Willis Company, New York, are showing a number of accessories and novelties at the Garden which will be of interest to the boatman. One of these is their cream freezer which freezes cream without turning. This Vacuum Freezer is made in two sizes, the larger size holding enough for nine people, and it is claimed that fifteen minutes after the cream and ice chambers have been filled the ice cream will be ready to serve. The new bronze "Mitchell" port light which they show is so designed that its frame is fastened to the wood work inside, thus eliminating any bolts or screw holes on the outside. The inside edge of the rim is beveled and flush with the inside of the glass rim when closed, thus insuring the greatest possible light for the opening. Another accessory which should attract a great deal of attention is the "Wilco" electric signal. This new "Wilco" signal has been especially designed for Class 1 boats, and it fully conforms with the laws.

The Mechanical Devices Company, Inc., Watervliet, N. Y., are exhibiting practically a full line of their shaftlogs, struts, universal joints, flexible couplings, etc., at the New York Show. One of their leaders this year is a new style of rudder for launches and speed boats only, which is particularly suited for fast boats. This rudder is finished for either single or double-rudder system, and with arm or quadrant as preferred, and it can be installed either on the transom or through the keel under the after deck. Other devices exhibited by this company which find favor with boat builders and buyers are their automatic aligning stuffing boxes, auto steering-wheels, Fish-tail weedless wheels, speed wheels, shaft hangers, submerged exhausts, etc.

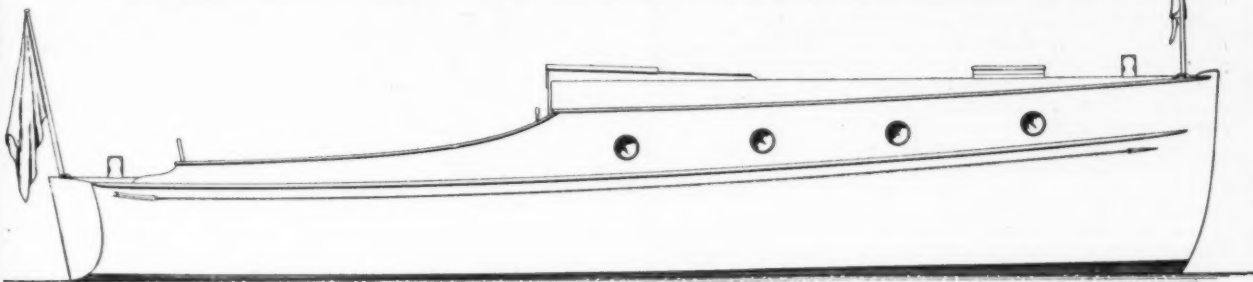
The Thermex Silencer Works, East Boston, Mass., are showing at New York and Chicago their improved Thermex muffler. This muffler, which is made in the shape of a ball, has many claims made for it. For instance, it is said that it permits the least possible noise with maximum revolutions because of the adjustable opening which regulates the flow of exhaust gases from the expansion chamber to get the best results from each particular installation; it is easy to install, as it can be placed at any angle above the waterline; because of the perfect mixture of circulating water and the exhaust gases the high temperature of the gases on issuance from the cylinders is cooled down to about 100° at the outlet from the Silencer. Other claims for it are that there can be no clogging, no muffler explosions, no salt deposit, and no back pressure.

The Evans Stamping and Plating Company, Taunton, Mass., have on exhibition at the two Shows models of their complete line of Paragon gears which are used by over 50 engine manufacturers in this country. They have also on exhibition models of their line of racing gears which were used on some of the best racing boats of the past season. The Paragon line of gears, which cover practically every grade of work to which motor boat reversing mechanism can be put, are all built according to the same designs and of the same materials. The forward drive is through a multiple disc clutch with excess friction surface, and the reverse drive is through four pinion gears equally distant from the center line of the gear, which does not allow any eccentric loading. There are only two adjustments—one for the forward drive and one for the reverse—which are in plain sight and easily "get-at-able."

The Stromberg Motor Devices Company, of Chicago, Ill., are displaying at Madison Square Garden a full line of their marine carburetors. A new carburetor which is said to have some unusual and commendable refinements is the feature of this display.

(Continued on page 65)

How to Build Consort II.



Outboard profile of the 28' cruiser drawn to the exact scale of $\frac{1}{4}''=1'$.

Full Detail Instructions and Plans for Constructing a Seaworthy One-Man Real Cruiser. A Practical Boat Having a Length of 28' O. A., a L. W. L. of 26' 6", and a Beam of 8'.

By Frederic S. Nock.

Part I.

THE accompanying illustrations are those of a small cruiser that was designed primarily with the idea of being easily constructed, in order that the average amateur who has some practical knowledge of the use of carpenter's tools could build such a boat.

No doubt many will criticise same; the stern should be different, the stem should have more rake, etc., but the explanation given above should be a sufficient excuse for the general shape of the boat not meeting the requirements of all.

If the instructions for building this boat are followed carefully, the builder will be surprised to find out how much he has learned about boat building by the time he has completed this craft. Then later on, the knowledge he has gained will be of material assistance when he again considers the building of a larger boat. Some of you will smile at this and no doubt will think that a boat of this size would be as large as you would ever need, but I have been there, and know how natural it is for one to realize quite often that the boat which he thought so large and commodious is just a trifle too small—and the best, or worst, of it is that the average motor boat owner is beset with this idea.

I had thought some of making a set of drawings of each mould and marking the dimensions on same, but

This cruiser, designed especially for Motor Boating by Mr. Nock, is by far the best one-man boat which has ever been turned out for the amateur to build. The description of how to construct this boat is complete in every detail, but not unnecessarily lengthy. The usual discourse on how to drive a nail straight, etc., which generally accompanies articles of this kind has been omitted, and just the important construction work included. The design itself is one which is thoroughly practicable in every respect, and great stress has been laid on developing one which would be absolutely seaworthy. Due regard has been given to all theoretical considerations, such as centers of gravity and buoyancy, trim, etc., so that the amateur should follow the plans exactly and he will be sure of a fine boat in the end—one that he will be proud of and feel safe aboard in all kinds of weather.

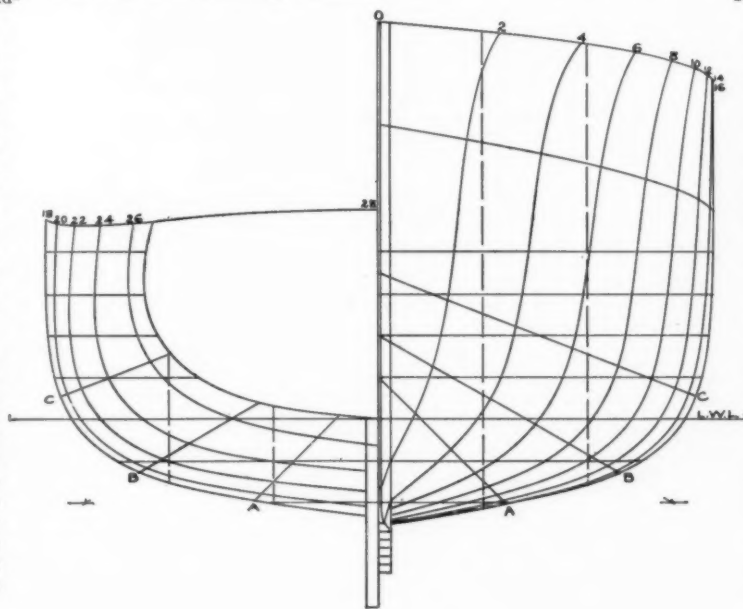
The second installment will appear in the March number, and Part 3 with complete specifications in the April number of Motor Boating.—Editor.

upon second consideration I concluded that it would be better to go into the matter properly, and then when you do want a larger boat, you can work directly from the plans your architect furnishes you, and not have to go to him and request that each part be drawn out separately.

Many of the magazines devoted to motor boats have published articles on the building of boats, and, as this matter has been dealt with very thoroughly by practical men, it is more than likely that any one contemplating the building of a boat has spent some time around a boat shop or seen boats being built by his friends, so I will dispense with the usual lengthy details about laying down the lines, and try to make it as concise as possible.

Before you start to build you must have a full-size drawing of the "lines." Copy the lines exactly, using the table of offsets to get the exact dimensions. I would advise copying all the lines, for then if an error occurs, it is much easier to find same by referring to the dimensions given of the half breadths on the waterlines, the diagonals, etc. Use good, straight grain pine for the battens, so that they will bend fair and true, and, above all, be sure that each line is correct before you make another one.

When you have the lines "laid down," or, in other words, have a full-size drawing of the lines, you can proceed



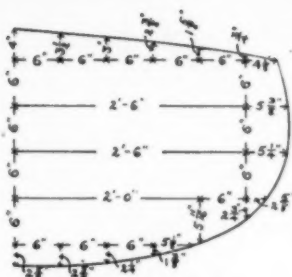
Body Plan of the Cruiser: to the right the forward sections and on the left the after sections. Scale $\frac{1}{2}''=1'$.

to get out the moulds. The material of which these moulds should be made depends, to a great extent, upon the location, but any good lumber, such as hemlock, spruce, fir, pine, cedar, or other material that can easily be procured, will be satisfactory. It should be dry, and planed two sides.

The lines as drawn are to the outside of the plank, and, as you want to fit the plank over these moulds, they must be reduced the thickness of the plank, or $\frac{3}{4}$ inch. You can make your moulds to the outside of the plank and then saw off the required thickness, but the better way is to make a line $\frac{3}{4}$ -inch inside each of the lines representing the stations or moulds, and cut to the required size.

The lines show the stations every two feet, and if you want to have the boat work out nice and fair, you should make a mould for each station. The practical builder would discard each alternate mould except, possibly, the last two at either end, and you could do this, provided you used battens that were heavy enough to keep the proper shape and hold the frames in place without bending same.

The lines show but one-half of each mould, but as both sides should be alike, I would suggest that you mark one side, saw it out to shape and then make a duplicate of same for the other side. This can readily be done by fastening the piece that is marked on another piece of board and sawing out the two pieces at one time, especially if you have access to a band or jig saw. Cut out all your moulds and then proceed to fasten them together. You will find that some of the moulds would require very wide stock if you wanted to get each half out of a single piece, and, as there would be little or no advantage in same, you can use narrow widths of stock and make up the large moulds of two pieces to each side, butting the joints together and securing them with cleats well fastened. Keep the edges of the cleats in from the outer edge of the mould about 2 inches, in order not to interfere with the frames, as some of them are close to the moulds. Lay the two



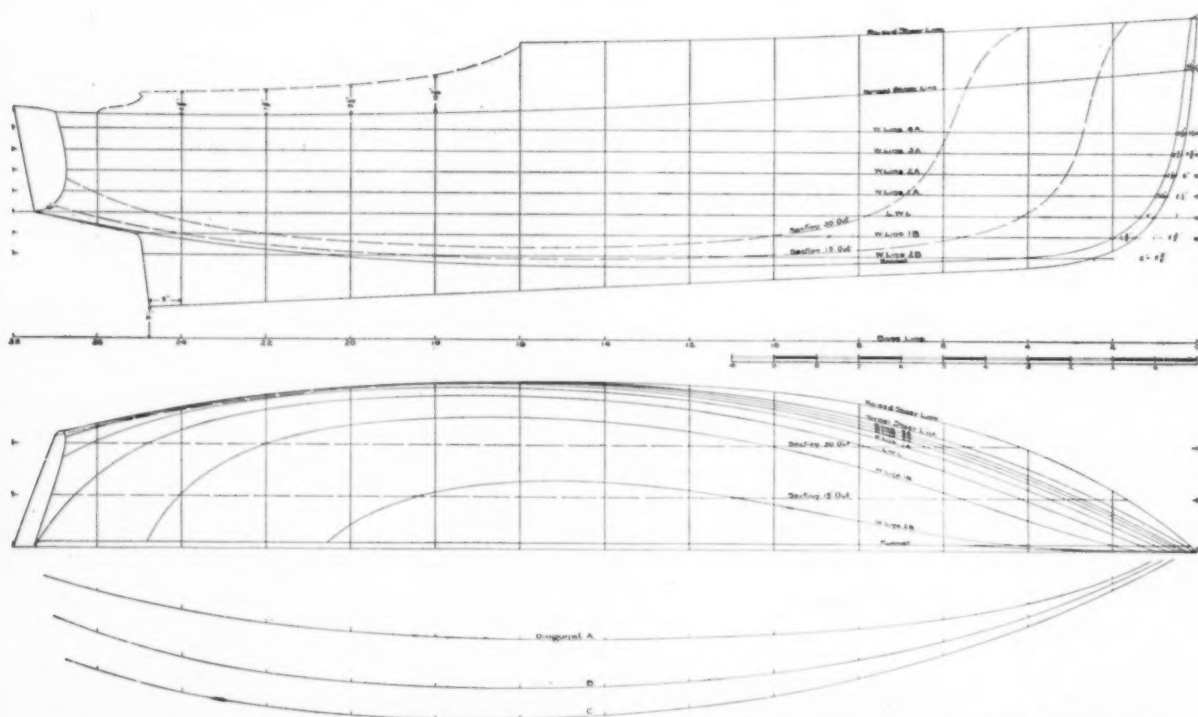
Plan of $\frac{1}{2}$ transom.

halves of the moulds on a flat floor and fasten the upper part with a piece of wood about 5 inches in width; this is called a cross pawl. In order to assist you, I would suggest that you place these cross pawls so that the lower edge of same is set to the line representing the normal sheer on each mould. Cleat the lower parts of each of the moulds together with a piece of wood about $2\frac{1}{2}$ " x $2\frac{1}{2}$ ", and you can fasten through these blocks to the keel to hold the moulds in place. It is a good plan to put a couple of braces, set diagonally, on each of the largest moulds, in order to insure them not getting racked out of shape in handling.

The next thing you can start to work on is the keel. This is to be of oak, and if you can produce a plank long enough to make it in one piece, so much the better, but as some of you may find it a difficult matter to procure a piece of oak longer than sixteen feet, it would be necessary to make a splice in the keel. If this has to be done, I should suggest making the forward end about 16 feet in length, and the piece for the after end should be about 10 feet in length. This would allow about 3 feet for the splice. Do not make this splice come to a shim point on either of these pieces, but make the end of the splice, or nib, about 1 inch deep, and have the forward end of the splice on the after piece of the keel overlap the splice on the piece for the forward end. Too much care cannot be given to the making of such a splice. It should be

a very good joint and should be well fastened with $\frac{1}{2}$ -inch diameter bolts. You can rivet these bolts if you desire, or you can draw them together with nuts. In either case, the heads should be countersunk into the wood at the bottom of the keel and be covered with wood plugs. When the keel is cut to the required shape and carefully finished, you should run a line down the center of the upper side and also mark across same the location of stations.

A piece of oak, $3\frac{1}{2}$ inches thick, about 12 inches wide, and 6 feet in length, will be required for the stem. The shape of the face of same can be taken from the lines, as also the rabbet, but you will have to refer to the construction plan for the shape of the inside. There are numerous ways of transferring the shape to the piece of wood you intend using. Probably the simplest way is to make a paper or wood template, and mark from this direct on one side, then saw and trim to shape. Reverse the template and mark on the opposite side the rabbet line. Run a center line down the face of the stem, and another line $\frac{3}{8}$ inches out on either side of this line. This will be the finished width of the face of the stem. With your chisel or some other suitable instrument, cut in the rabbet line you have marked, so as to prevent it from becoming erased as you handle the stick, and then proceed to bevel the sides of the stem from the rabbet line to the line $\frac{3}{8}$ inch out on either side of the center line. Finish smooth and true, if you are going to use this bevel as a guide to work out the rabbet. You will also need a fid to show you just how much depth and width is required for the rabbet, and a simple fid can be made as follows: Take a piece of hard wood having a thickness, or an edge, of exactly $\frac{7}{8}$ inch, a width of 2 inches, and a length of about 8 inches. To the edge of this piece, and near one end, fasten another piece of wood exactly $\frac{7}{8}$ inch square, and about 4 inches in length. This small piece of wood you apply represents the thickness of the planking, and if you will cut the rabbet into the stem



Lines of the 28-footer reproduced to the exact scale of $\frac{1}{4}"=1'$, so that the amateur may easily pick off his points.

so that this small piece fits in the place cut, and the other part of fid sets flush on the beveled side of the stem, you will find that it will give you the required shape of rabbet. Make several cuts at intervals of about 6 inches, and then you can rough out the surplus wood in between, but, before the rabbet is finished, the fid should fit fairly close at any part if laid across the stem in the same direction as the plank meets same. To those who know how to mark on the lines as laid down, the shape of the line representing the intersection of the inside of the plank with the stem, a little time can be saved by doing it. Another point that might help you when you mark off the stem would be to draw the waterlines across same and then you can cut the rabbet to the exact bevel. However, I have found that the average amateur does not cut the rabbet exactly, and, if you are careful when you start to place the battens in position, you will take care that

they fit the rabbet in the stem. If they don't fit properly, pare the rabbet until they do fit, but take care not to get it too deep. Otherwise, the side of the stem will stick out beyond the planking, when, as a matter of fact, the plank should stick out a trifle beyond, so as to allow for planing.

You will require an oak, or hackmatack, knee to connect the stem to the keel. If you cannot procure same, you will have to cut it out of a piece of wood, or else build it up of two pieces. It would require a piece $3\frac{1}{2}$ inches thick, 18 inches wide, $4\frac{1}{2}$ feet in length. If cut out of a plank, be sure and have the grain run so as to get the maximum strength, and avoid as much as possible the use of any short-grain material in constructing the framework. Cut this knee to the required shape, mark the rabbet line, and then proceed to bolt it to the stem. Make good, tight joints, and use $\frac{1}{2}$ -inch diameter bolts. Bolts and nuts are better for you to use than bolts riveted over washers, as they will, in all probability, draw the joints closer together. If you look carefully at the construction plan, you will note that the joint, as shown, has a small key in the center of the joint. This is a simple method of securing, or locking, such a joint, and it is very efficient. Cut a slot from $\frac{1}{2}$ to $\frac{3}{4}$ inches deep, and about 2 inches in length clear through on the stem and knee. Make these slots so that one is about $1/16$ inch out of a line with the other, then when you put in the bolts and have drawn them up fairly tight, drive through this slot two pieces of oak that will fit fairly close. They should not bear on either the stem or the knee, but must be very tight in the other direction. When you drive in these wedges, if you have cut the keyway properly, you

will find that it will draw the points of the scarf at the top and bottom close together. Then tighten the bolts all they will require. The lower part of the knee can be fitted and secured to the keel in the same manner. Take care, from time to time, to see that the siding of the stem does not get out of line; that is, either tilt back or forward.

The next thing that will require your attention is the shaft log, and, unless you have some particular reason for altering the line of the shaft, I would advise your working to the shaft line on drawing, as this has been specially prepared in order to meet the requirements of a number of well known engines of about the right size for this boat. This log is made up of two pieces of oak, $3\frac{1}{2}$ " x $4\frac{1}{2}$ ". Procure two pieces of stock with a fairly straight grain, 5 feet in length, which will allow enough for squaring the ends. Square the four sides and ends of these two pieces. Then draw a line through the

alley without cutting into either of them. Make up white pine splines that will fit the sides of the groove snugly. Be sure that you do not make the splines much more than $\frac{7}{8}$ inch or $15/16$ inches deep, for if they strike at the top and bottom of the grooves, you will find it a very difficult matter to draw the two pieces of the shaft log together.

Having completed the log, it is ready for bolting to the keel, unless you want to work it to shape first. If so, you can trim the edge that fits on top of the keel $\frac{1}{2}$ inch on either side, and the same with the topside of the upper half. Work the edges so that it will be rounding in form on the sides. Then put in the splines, running the grooves and the edges that come together with lead paint. Draw together with clamps, place in position on keel, bore carefully and bolt to the keel. Keep the two bolts at the forward end about 5 inches from the end, so that these bolts will not interfere with the fasten-

ings that you may use to secure the stuffing box. Put the next bolt on one side about 8 inches aft of the first one, the one on the opposite side 8 inches aft of that; and so on, marking on the side of the log the general position of these bolts. Use $\frac{3}{8}$ -inch diameter bolts. These should be cut about 13 inches in length, and good-size heads should be hammered on same before they are driven in. It is possible to

procure countersunk head bolts that are well suited for this purpose. Drill the holes $5/16$ -inch diameter, and then if you taper the ends of the bolts a trifle, you will find that they will drive tight, and draw the shaft log close to the keel. You may wonder why these bolts are not closer, and I will explain by stating that when the horn timber is fastened in place, the bolts for same are alternate with those already driven. Thus, you will readily see the advantage in having the marks showing the location of the bolts, the heads of which would be concealed by the horn timber.

For the horn timber you will need a piece of oak, $3\frac{1}{2}$ inches thick, 11 inches wide, and about 7 feet in length. Cut this to the required shape, run a center line along the upper side and fasten in place, boring for, and driving the bolts in the location aforementioned. If you feel that you don't mind the extra labor entailed, you can bore clear through the horn timber, sides of shaft log and keel, and use bolts and nuts in place of drift bolts. The stern post is to be made of oak, $4\frac{1}{2}$ " x 4". The shaft log is $4\frac{1}{2}$ " though; therefore, you can readily see that the stern post must be worked to shape with a swell on either side to conform to the shape of the shaft log, keel, etc.

(To be continued)

All Dimensions given in Feet, Inches, and Eights, and above Base Line 3 Feet below the LWL - All Lines in Outside of Plank.

Stations	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28
Raised Sheer	7.90	7.73	7.57	7.45	7.33	7.24	7.16	7.12	7.06						
Normal		6.40	6.21	6.02	5.83	5.77	5.73	5.63	5.53	5.46	5.41	5.37	5.37	5.41	
Rabbet		2.57	2.01	1.11	1.01	1.94	1.91	1.90	1.93	1.91	1.14	2.15	2.44	2.83	
Keel Bottom		2.21	1.87	1.76									0.93	2.51	
Section 15' Out		7.16	3.06	2.47	2.21	2.05	1.15	1.11	1.13	1.16	2.11	2.50	2.60	2.103	
" 30 "				4.90	2.11	2.61	2.36	2.25	2.24	2.27	2.40	2.60	2.96	3.52	
Raised Sheer		1.55	2.51	3.07	3.61	3.93	3.11	3.17	4.00						
Normal		1.07	1.115	2.50	3.23	3.67	3.97	3.14	4.00	3.13	3.97	3.72	3.34	2.106	
W Line 4A		0.110	1.95	2.63	3.11	3.61	3.94	3.12	3.17	3.14	3.101	3.75	3.40	2.113	
" 3A		0.101	1.86	2.53	3.02	3.53	3.87	3.107	3.115	3.114	3.102	3.80	3.43	2.114	
" 2A		0.90	1.74	2.42	2.112	3.44	3.81	3.102	3.112	3.112	3.101	3.77	3.41	2.103	
" 1A		0.73	1.55	2.24	2.96	3.31	3.67	3.91	3.102	3.102	3.91	3.67	3.24	2.66	
LWL		0.50	1.22	1.110	2.64	3.02	3.42	3.66	3.76	3.76	3.65	3.56	2.96	1.75	
W Line 1B		0.17	0.86	1.46	2.00	2.56	2.100	3.06	3.17	3.13	2.112	2.60	1.34		
" 2B				0.42	0.84	1.11	1.47	1.72	1.72	1.41	0.63				
Diagonal A		0.74	1.26	1.74	1.102	2.01	2.11	2.16	2.16	2.11	1.115	1.92	1.55	1.02	
" B		0.90	1.64	2.20	2.73	2.111	3.16	3.32	3.34	3.22	2.115	2.71	2.01		
" C		0.107	1.91	2.57	3.06	3.57	3.94	3.115	4.06	4.07	3.116	3.94	3.53	2.107	

Diagonal A intersects Perpendicular 3'-6" Above Base Line & Base Line 3'-6" Out

" B				4'-0"											
" C				4'-9"											

Laying-down table for the cruiser, figured to the outside of the planking.

center of one side of each piece. This will bring the line $2\frac{1}{4}$ inches in from either edge. This line will represent the center of the shaft alley, and, as it is to be $1\frac{1}{8}$ inches in diameter, you will require another line parallel to center line on each side $1\frac{1}{16}$ inches out. I would suggest that these lines be cut in with a gauge, as it is much easier to trim to a line that is cut than a pencil mark. On each end, draw a half circle, the radius being $13/16$ inch, and then cut away the wood so as to have a half-round groove in one side of each of these pieces. Needless to state, the work would be greatly simplified if you could obtain the use of a circular saw to remove the majority of the wood, and it could then be trimmed with a gouge and round plane. When you feel that it is as near correct as you can make it, clamp the two pieces of wood together, and if you can obtain the use of a bit or twist drill, $1\frac{1}{8}$ inches in diameter, run this through the alley, and thus remove any unfair places. Take the two pieces apart and carefully sandpaper the alley. On either side of the shaft alley there should be a space $17/16$ inches in width, and in this, a groove about $\frac{3}{8}$ inch wide and $\frac{1}{2}$ inch deep is to be cut. If you start the groove $\frac{3}{8}$ inch in from the outer edge of either side, you will allow for the bolts to go between the groove and the

A Motor Lifeboat Cruiser.

A Thirty-six Footer Designed and Built by The Holmes Motor Company. The Novel Construction Methods and Arrangements All Planned for Safety.

By Geo. S. Hudson.

AN ABSOLUTELY safe boat for commercial or pleasure purposes seems rather a far cry, even in these days of rapid advance in design and installation of power plant. Such a craft, however, has been brought out by the Holmes Motor Company, Inc., of West Mystic, Conn. A more honest boat does not exist than this last word in scientific construction, the culmination of years of painstaking development along conservative lines.

Safety at sea demands a great deal more than the orthodox equipment of passenger-carrying ships—at least, the equipment that, for generations, has been stamped as good enough to cope with emergency arising from collision or destruction of a giant liner by that most dreaded disaster—fire. Time has arrived, however, when travelers scrutinize a ship's lifesaving appliances before reserving accommodations. The seasoned tourist wants to know that his life is to be safeguarded when the crucial moment comes, and the liner's small boats spell either salvation or death.

With knowledge of limitations in steamship equipment, the Holmes Motor Company wrought along lines calculated to revolutionize methods now in vogue. The results achieved have startled the maritime world and marked a new era in transatlantic travel. Shipping magnates agree that the Holmes boat, its

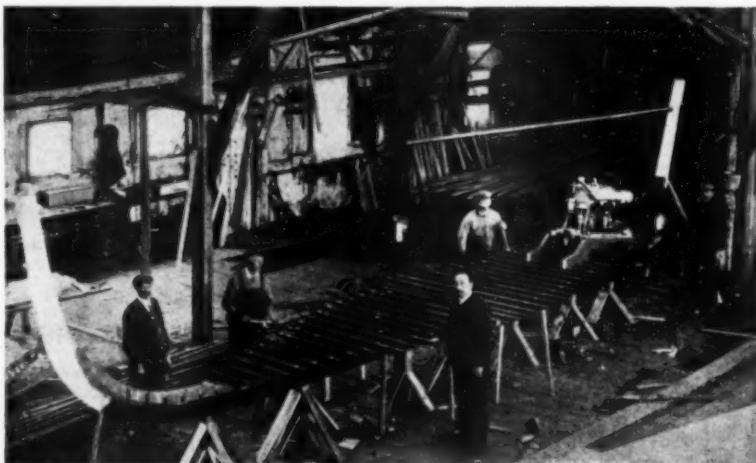
unique launching device and the wonderful facility with which a big ship's passengers and crew may be cared for, stands preeminent

would wrench the stoutest steamship asunder by merciless battering. The great liner labors, weaves, and, unfortunately, floats like a half-tide reef under impact of watery mountains. The Holmes 36-footer, under like conditions of wind and sea, should ride combers like a chip—dry, buoyant and intact.

Unlike other lifeboats that have proved practicable, the Holmes boat has a cabin that affords shelter, warmth and light for those forced to flee a foundering ship. Ample ventilation is provided; space is arranged for supply of food and water. In this lifeboat is embodied a yacht's interior, sharp contrast from the regulation lifeboat cumbering the liner's decks, with no provision for shelter from killing cold, and the exhaustion incident to battling boarding seas that continually threaten, and, alas, too frequently capsize the frail, open affair, and hurl its occupants to death.

The motor in the Holmes lifeboat is in a separate compartment in the stern of the boat, entirely apart from, and having no connection with, either cabin or cockpit. This arrangement eliminates noise, odors and vibration. Danger of fire is nil because the motor compartment is cemented to the floor-line and drained from a well that is pumped automatically by the motor. The sides of this compartment are lined with metal, and the compartment is absolutely tight, as water cannot enter the com-

(Continued on page 70)



In the first stage of construction. Note the floors and motor in position before framing.

among devices claimed to minimize perils commonly associated with ocean voyages.

The same motor that has been adopted by the United States Life Saving Service furnished the power equipment of this truly remarkable boat. Everything about the unique craft has been built around safety, and the Holmes Motor Company stakes its reputation on this particular product of its plant. On a length of 36 feet has been fashioned a boat sturdy enough for a world-girdling voyage; a boat that can weather gales that

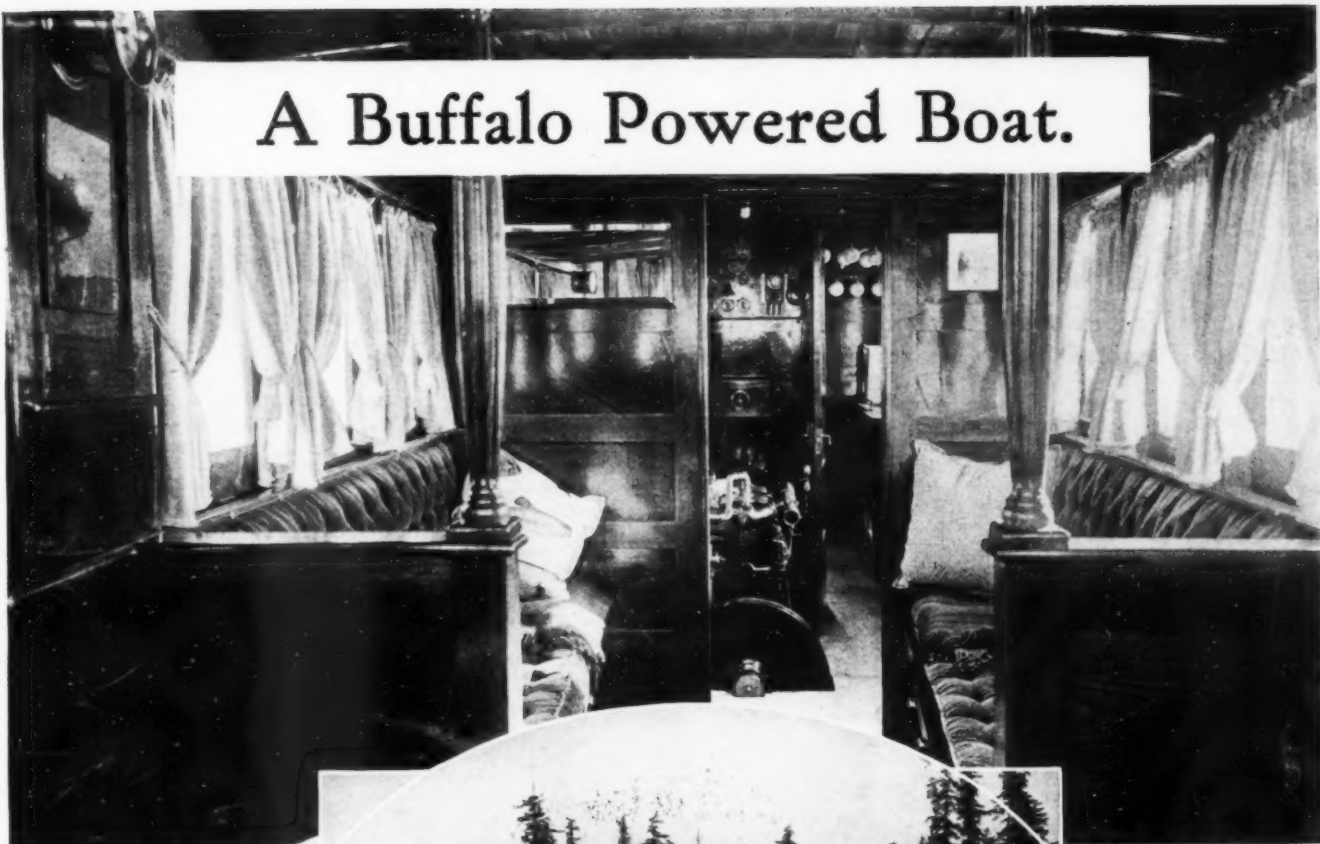
apart from, and having no connection with, either cabin or cockpit. This arrangement eliminates noise, odors and vibration. Danger of fire is nil because the motor compartment is cemented to the floor-line and drained from a well that is pumped automatically by the motor. The sides of this compartment are lined with metal, and the compartment is absolutely tight, as water cannot enter the com-

Boat framed up and carlines in position.



The 36-foot Holmes cruiser life boat with a Holmes get-at-able motor.

A Buffalo Powered Boat.



The cabin and engine-room.

THE illustrations on this page are of Nadine, owned by Mr. F. Lincoln, of Chicago, Ill., and is his fourth boat which he has powered with Buffalo motors, which speaks a great deal for this particular make. Nadine,



is of the glass-cabin type, 53 feet in length, has a beam of 9½ feet, and is powered with a 26-30-h.p., four-cylinder, four-cycle, Buffalo motor. The hull was built by Mark Johnson, of Seattle.

Nadine under way.



Looking forward in Nadine's cabin.

MARINE MOTORS

Scripps Motors in 1914.

Seventeen Engines in a Comprehensive Line Which Covers Practically Every Service. Exceptional Completeness of Equipment a Feature of the Extremely Heavy Duty Models.

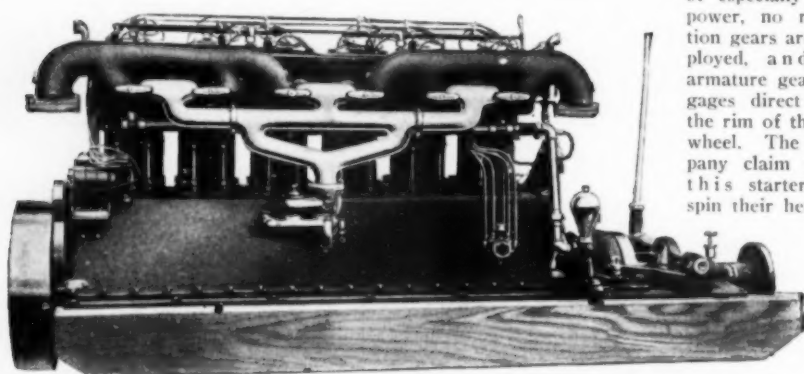
THE new year sees a number of refinements in the existing 17 models of the Scripps line of engines manufactured by the Scripps Motor Company, of Detroit, Mich., although there have been no additions to this exceptionally complete line. The water mani-

other parts. Provision has been made on all four and six-cylinder models for the installation of an electric starter. The starter used is of Rushmore manufacture, with floating armature which automatically meshes the gears when the current is switched on. As the starting motor is of especially high power, no reduction gears are employed, and the armature gear engages direct with the rim of the fly-wheel. The company claim that this starter will spin their heaviest

The Scripps engines are divided into three classes, namely, extreme heavy-duty, medium-duty and semi-speed models. Of the semi-speed engines, which are very substantial in construction and equal in durability to some of the slower, heavier models, there are five sizes. These are, two, four and six-cylinder machines, rated respectively at 13, 30, and 45 h.p., and a four and a six developing 48 and 72 h.p.

There are seven models in the medium duty size, ranging from a single-cylinder, $4\frac{1}{2}$ -6 h.p., to a six-cylinder, 48 h.p. The extremely heavy-duty are in two, four and six-cylinder models, with bore and stroke of $7\frac{1}{2}$ " x 9", with a power rating of 24-32, 49-64, and 73-96 h.p., respectively. In these engines the manufacturers have endeavored to make the most completely equipped heavy-duty motors on the market, the regular equipment including a positively-driven bilge pump, a high-power air compressor, and two independent systems of ignition, consisting of a Bosch type ZR waterproof two-spark magneto, and a Delco single-spark battery system. There are three spark plugs in each cylinder, and one of these is fired by the Delco system, while the other two, in extreme points of the combustion space, are simultaneously fired by the Bosch system.

The remaining model in this extensive line is the Scripps Midget, a four-cylinder, 7 h.p. unit motor for use in the best yacht tenders.



Model D like all the heavy duty Scripps motors is equipped with two independent ignition systems firing three sparks in each cylinder.

folds have been changed somewhat so that the number of joints has been reduced one-half, and extra precautions have been taken to prevent the escape of oil from crankcase, reverse gear and

motor 200 r.p.m., even with the throttle wide open. A silent chain drives directly from the crankshaft a Rushmore, 6-volt, variable-speed generator which generates current for starting.

A New Two-Cylinder Eagle.

Having Cylinders, Intake and Exhaust Manifolds and Upper Crankcase Cast in One Piece. Unusual Construction of Connecting Rods Facilitates Lubrication of Bearings.

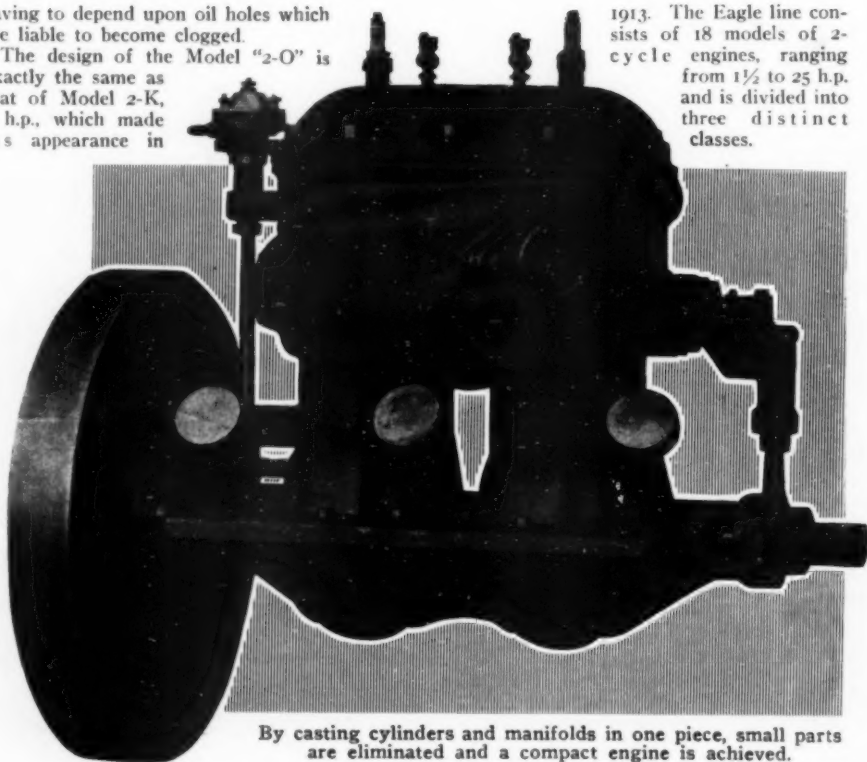
THE Standard Company, of Torrington, Conn., manufacturers of Eagle engines, have brought out a new high-speed model for 1914, known as Model "2-O," which is a 3-port, 2-cylinder, en bloc machine, with $4\frac{1}{2}$ " bore and 4" stroke, developing 12 h.p. at 800 r.p.m., and weighing but 250 lbs. In order to eliminate as many small parts as possible, both cylinders, intake and exhaust manifolds, and upper crankcase are made in one casting. Besides making a very compact and neat engine, this construction also obviates the use of several gaskets.

Lubrication is by grease from compression grease cups on main bearings, and by oil in gasoline for piston, piston pin and connecting the rod bearings. A feature of special interest is the construction of the connecting rod. Instead of the conventional split bushing for the crank-pin bearing, only a half bushing is used, and this is fitted to the lower end of the connecting rod. As all the wear comes on the part of the bushing which bears the downward thrust of the piston, only a half bushing is required, while the hinged, bronze connecting rod cap forms the other half of bearing. Since the only function of the cap is to keep the connecting rod on the crank-pin when starting and reversing, this part is subjected to practically no strain. Taking advantage of this fact, the cap is made but half the length of the crank-pin, leaving a portion of the crank-pin exposed on either side of the cap. With the method of lubrication employed, this bearing is always perfectly oiled, inasmuch as the oil is deposited directly on the crank-pin, without

having to depend upon oil holes which are liable to become clogged.

The design of the Model "2-O" is exactly the same as that of Model 2-K, 7 h.p., which made its appearance in

1913. The Eagle line consists of 18 models of 2-cycle engines, ranging from $1\frac{1}{2}$ to 25 h.p. and is divided into three distinct classes.



By casting cylinders and manifolds in one piece, small parts are eliminated and a compact engine is achieved.

Kahlenberg Heavy Oil Motors.

Known as Semi-Diesels, but Started by Gasoline Without the Use of Torches or Hot Bulbs. Heavy Oil Fuel Handled by Hollow Shaft and Injection Pump for Each Cylinder.

MARINE motor builders have faced a serious problem in the production of an engine to operate successfully on the heavier fuels, such as gas oil, kerosene, solar oil and similar fuels. Hence much interest has been shown in the recent announcement of a motor of this kind from Kahlenberg Bros. Company, of Two Rivers, Wis.

This is a 75-85 h.p., three-cylinder, two-cycle, 9-inch bore, 10-inch stroke motor. It is started on gasoline in the usual way, and run for a minute or two. Then the gasoline is shut off, and the motor begins at once to operate on kerosene or similar fuel. The fuel is injected directly into the combustion chamber, when the piston is near the top of its stroke. When the motor is using kerosene, only pure air is taken into the base and on this class of fuel the consumption is said to be less than one-tenth gallon per horsepower hour.

Fuel is handled by means of a hollow layshaft on the side of the motor operated from the rear by eccentrics. This gives individual motion to the injection pumps, of which there is one for each cylinder. A single lever controls the stroke of these pumps for speed regulation.

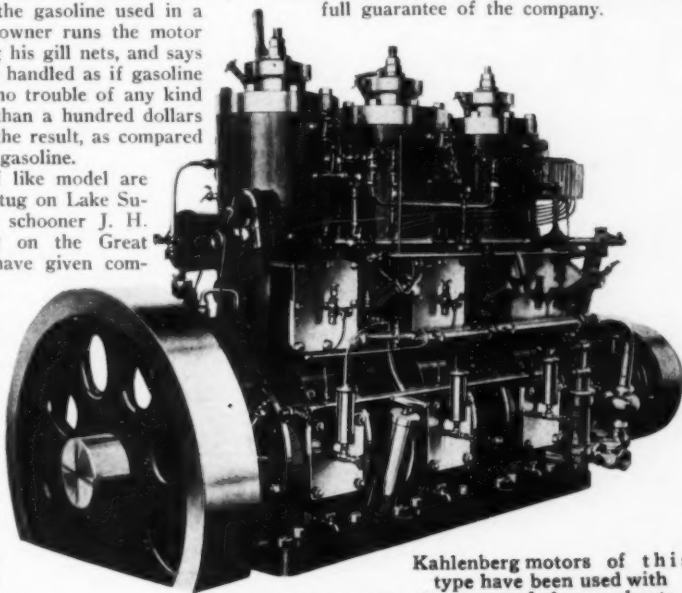
The advantages claimed for this motor are instant starting without heating arrangement, such as torches or hot bulbs, and that the motor may be used as an ordinary gasoline motor if desired. A motor of this type has been in service at Two Rivers since April, 1913, in a

fishboat that must encounter all kinds of weather, running 10 to 12 hours every day. This motor is started on gasoline, and after it has run about a minute is switched to kerosene. This is all the gasoline used in a day's work. The owner runs the motor slowly while lifting his gill nets, and says it is just as readily handled as if gasoline were used. With no trouble of any kind a saving of more than a hundred dollars a month has been the result, as compared with operating on gasoline.

Other motors of like model are in use in a fishing tug on Lake Superior, and in the schooner J. H. Stevens, operating on the Great Lakes, and both have given complete satisfaction. The cruiser Roboco, built by the Racine Boat Company, is equipped with this type Kahlenberg motor. She is now in Florida, after a busy season, and the motor has given perfect results.

The new Kahlenberg type, known as a "semi-Diesel,"

was placed on the market only after thorough trial. The service it gave in boats of various types has convinced the builders that it is correct in every detail, and it is offered with the full guarantee of the company.



Kahlenberg motors of this type have been used with success on tugs, schooners and pleasure boats.

The 1914 Kermath.

Several New Features, Including a Hand Hole Plate to Open Up the Entire Side of the Motor. A 12 h.p. Motor in Which a Good Deal of Thought Has Been Devoted to Lubrication.

WITH the many detail improvements which the Kermath Manufacturing Company, Detroit, Mich., announce with the 1914 model, it is probable that their business will be greater than ever. The engine crankcase has been re-designed so that a fine, big hand-hole plate, 16½" long and 4½" wide, opens up the entire side of the motor, and a very much smaller hard bronze oil pump has been placed at the back end of the crankcase, instead of at the center as heretofore. The pistons are being fitted with heavy

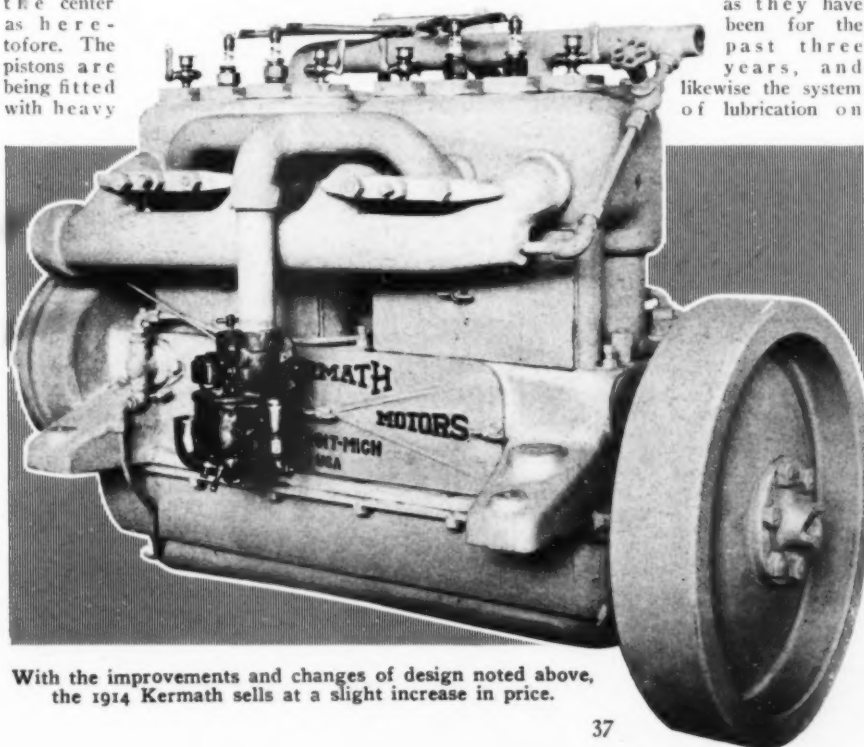
bronze bushings on both sides to receive the piston pins, and the bottom of the connecting rods are fitted with dippers instead of having the entire rod dip into the oil as previously, while the oil pan has undergone some changes, inasmuch as the lower pan forms a reservoir, and the sub-pan will contain the dipper pockets from which each one of the connecting rods will receive its lubrication. The large oil wells over each one of the main bearings are retained the same as they have been for the past three years, and likewise the system of lubrication on

the timing gears. The changes noted are in the nature of refinements. The general construction of this engine has not been changed, and the Kermath Company goes into its fourth year announcing a one-policy model for 1914, and, with the changes noted, a slight increase in price.

Arrangements have been made with the Paragon Gear Company to furnish a special Kermath-Paragon gear, in which the rear support will be the same width as the Kermath engine arms, so that the entire equipment may be put on one engine base. With the Paragon outfit will be furnished a forward and reverse thrust bearing, propeller stub shaft, and rear coupling complete.

The other reverse equipment listed with this engine will be the Gies enclosed type gear, which will also be furnished complete with both sets of couplings. The Kingston dual magneto has been adopted as regular equipment on the outfit "B." The Duplex coils will be furnished on the outfit "C," and the Bosch dual magneto will be furnished on the outfit "E." Altogether, the Kermath motor carries one of the best lines of equipment it is possible to buy, being high-grade in every respect like the motor itself.

An innovation in this company's line is a 2-cylinder special yacht tender, 4-cycle motor of 5 to 6 h.p., with 3½" bore and 4" stroke. The cylinders are finished in gray enamel; the water manifolds and valve plugs are all of polished brass, and the fly-wheel is finished and polished all over and heavily brass-plated. The crankcase and oil pan are entirely of polished aluminum. The company state that it is a very beautiful outfit in every way, and in keeping throughout with the finish of the finest yacht. It is strictly special with them and built only on order. The outfit is fitted with an 18-pound Joe's reverse gear, and the whole outfit, complete with reverse gear, weighs approximately 190 pounds.



With the improvements and changes of design noted above, the 1914 Kermath sells at a slight increase in price.



Devices & Stunts



[This department is being conducted as a regular feature of MoToR BoatinG, and we ask our readers to send us photographs or sketches, preferably photographs, with descriptions (of no more than three or four hundred words) of unique devices for or improvements in their boats which they have made themselves or had made for them. We will pay \$5.00 each for all items of this kind with the accompanying photographs or sketches which we use. The more who send in material the better we shall like it, and the better the department will be.—THE EDITOR.]

Keeping the Tiller Line Tight.

A Device Which by Means of a Spring Automatically Overcomes This Usual and Troublesome Condition. An Easy Method of Compensating for the Shrinking and Stretching of Cotton Lines.

By W. E. Motz.

DURING the first year of the career of Edna M., the writer experienced difficulty in keeping the tiller lines "fair" on the steering-wheel drum. This is a common occurrence on boats not equipped with the more satisfactory quadrant tiller, and is caused by the slack which occurs on the off side of the drum when the tiller moves to either side of its central position. As the tiller was located above deck, the substitution of a quadrant for the straight tiller was not advisable, because of valuable deck space utilized and unsightliness.

Accordingly, the take-up shown in the drawing was devised, and inserted in each side of the tiller lines, close to the steering-wheel. The device consists of two small brass or bronze

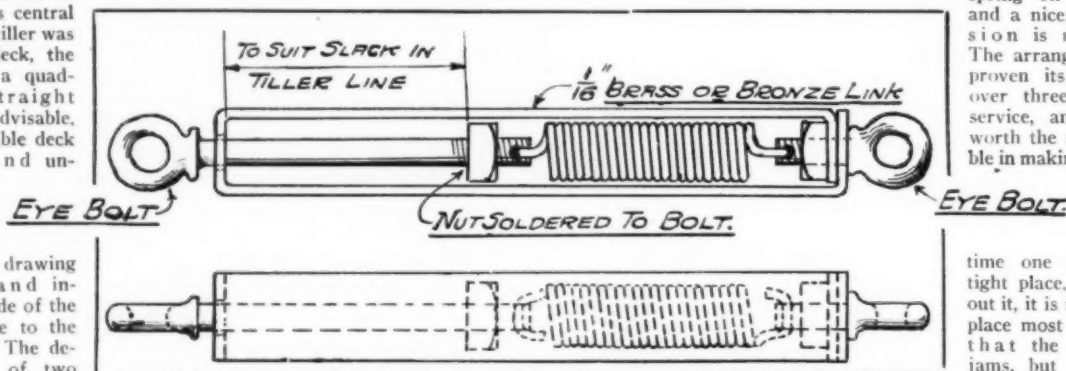
eye-bolts, a link of brass or bronze bent up as per sketch and a brass spring. Steel or iron may be used instead, but are not quite so satisfactory, owing to the tendency to rust. The eye-bolts move easily in holes in the link and are drilled at the inner end to take the spring.

In installing, the tension on the tiller lines

should be adjusted so that the take-ups will be pulled to their fullest extension when the tiller is in its central position. In this condition, the tension is transmitted through the link, and not the spring. In turning the steering-wheel, the slack which occurs on the off side of the drum is immediately taken up by the

spring on that side, and a nice, even tension is maintained. The arrangement has proven its worth in over three years of service, and is well worth the small trouble in making. In fact, it is apt to pay for itself the first

time one gets in a tight place, for without it, it is in the tight place most frequently that the tiller line jams, but with it it cannot jam.



An arrangement for keeping the tiller line tight.

Replacing Broken Valve Stems.

A Simple Arrangement Which Will Assure Absolute Alignment of the Valve Stem Guides. Apparatus Which May Be Used on Many Types of Four-Cycle Motors.

By C. E. Bradley.

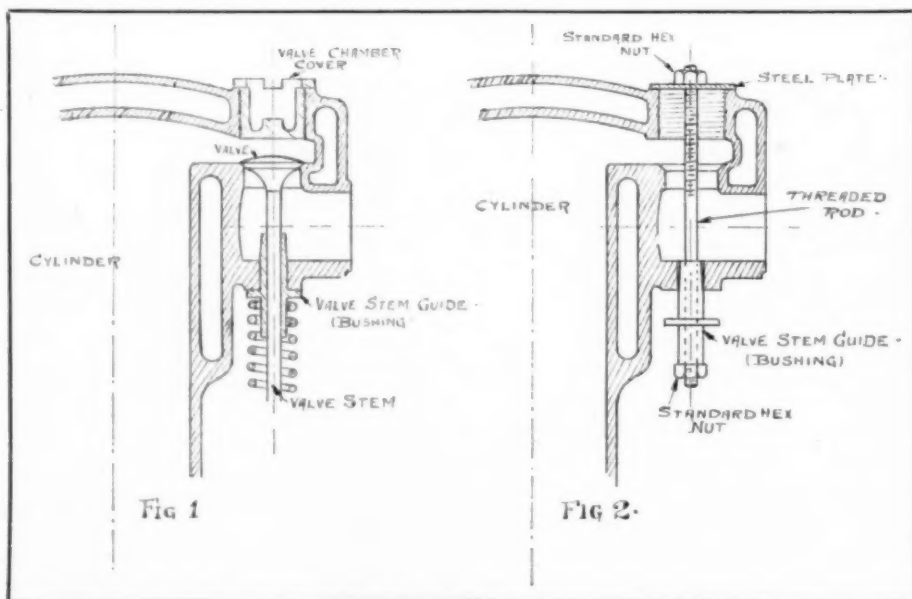
AN IMPORTANT detail of refinement found in many of our up-to-date, well-designed marine motors of the four-cycle type is the removable valve stem guide.

A former method of construction was to cast and machine the guides integral with the cylinder. This was somewhat cheaper in the first cost than the present-day method of building the cylinders with the guides as a separate fitting or bushing. Valve stems and guides, however, like all other moving parts of the motor, are subject to wear, and guides, as part of the cylinder casting proper when worn, were either reamed out to a slightly increased size and fitted with valves having larger diameter stems to fit

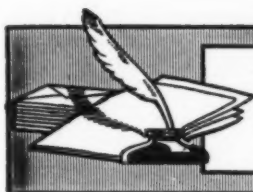
these trued up holes, or drilled out to a larger size and bushed with a thin steel or brass tube. These methods of remedying, at their best, were but a makeshift job,

as is evident it would be impossible to do either very many times, hence continued trouble, if on the inlet side, due to leakage of air between the side of the worn hole, and the valve stem thereby diluting the mixture entering the combustion chamber.

Marine engine manufacturers now supply these guide bushings as an interchangeable part (see Fig. 1 in sketch), a force fit to a true (tapered or straight) hole machined in the valve chamber casting. When a bushing becomes worn it is a simple matter to knock it out of place, yet it seems somewhat of a job to replace the new part. True, it might be hammered back in place, but there is always the possi-



Simple device for drawing in valve stem guide.



From Motor Boating Readers



A Department for the Exchange of Ideas and the Discussion of Questions of General Interest.
Editorial Opinion on a Number of Questions Submitted by Readers of the Magazine.

MoToR BoatinG's columns are open to its readers, not only for asking questions, but for placing before them other readers' ideas, results of experience, opinions, etc., that should be interesting or helpful to them; but the editor will not, of course, be responsible for any opinions expressed or statements made in such communications. The name and address of the writer must necessarily be given in every case to make answer by mail possible (no anonymous contributions will be considered for publication), but names will be omitted in publishing the letters and answers where desired, in which case it is desirable that initials or other distinguishing signature be appended. Through the correspondence department, readers of the magazine may be of direct aid to one another in solving the problems of motor boating.

More Speed Impossible.

To the Editor of MoToR BoatinG, Sir:

I have read with interest your various issues of MoToR BoatinG for the past 18 months. You have helped others, would you kindly help me also?

I am the owner of an 18' compromise stern boat, 54" beam, 18" draught. The freeboard at bow is 24" or so, and the general lines are very good. The engine is a 2 cylinder one, rated at 4 h.p. at 900 r.p.m. We have a 12" two blade, reversible propeller at present, which drives the boat at about 7 miles per hour without labor. Engine runs like a sewing machine—in fact, it can hardly be heard running 25 feet distant.

From the semi-speed lines of the boat, and the fact that the engine runs so smoothly, I am under the impression (together with others), that boat with present engine ought to give more speed.

What in your opinion should be the pitch and diameter of a propeller to give a speed of 9 or 10 miles per hour (if it can be obtained)?

The make of same, whether 2 or 3 blade. If I can get more speed by taking out reverse gear, I will do so. What speed is possible finally, with this boat and engine? If you should recommend a different diameter and pitch, could you not recommend one that would thrust boat forward, pushing up stern slightly instead of drawing down?

The engine is situated about three-quarters or five-eighths of the distance from the bow, thereby very slightly settling stern downward.

Dimensions are 4½ ft. forward deck, 10 ft. cockpit, 3½ ft. rear deck, 18 ft. 3 in. over all. Engine is situated about 13 feet from bow stem.

If you will kindly answer above questions in your "Questions and Answers" column (whether for or against), I will be under many obligations.

W. C. H., Brockton, Mass.

[We believe you are obtaining very good results with this type of boat, which is not suited to much greater speed than you are obtaining.]

We are familiar with this particular type of hull, and believe yours is a good average speed, and we would not recommend any changes, unless you wish to change everything around and install a new motor, etc.

Probably your propeller may be a little more inefficient than one we would recommend, yet the loss is so slight that to gain this additional increase in speed the change would hardly be justified.

There is nothing you can do easily to prevent the squatting of this boat at the stern. It is typical of this type of hull and cannot be remedied with any degree of satisfaction.

Your question as to the proper wheel for a speed of 9 or 10 miles an hour is, of course, impossible to answer, as it would take about three times the power which you now have to give you the latter speed; then your boat would trim so, that it would not be a practical proposition.]

Variation of the Compass.

To the Editor of MoToR BoatinG, Sir:

I would like to thank you for the help that you have given in answering my previous question. But at the same time I will admit that I am still going to bother you for another answer.

A few days ago I overheard a heated argument between two men who are supposed to be pretty well acquainted with motor boats. The argument I will fully explain in my question.

Does a compass always point north no matter what part of the world you may be using it; if not, why not?

Does a compass change its direction when crossing the equator? If so, in what direction does it change?

A. E. B., Detroit, Mich.

[The compass seldom, if ever, points in a truly northerly direction. Of course, you understand there are really two norths, one of which is called the true north, and is the theoretical end of the earth's axis, and the other is called the magnetic north. It is toward the latter pole that the compass is supposed to point in the northern hemisphere. In the southern hemisphere the south pole of the compass points in the general direction of the

south magnetic pole, and there is no change in the direction of the compass needle as the equator is passed.]

By reason of the fact that the magnetic pole differs in position from the geographical pole, the compass needle will not indicate true directions, but each compass point will differ from the corresponding true point by an amount depending upon the angle between the geographical and magnetic pole at the position of the observer. This difference or error is called variation of the compass. The variation not only changes as one travels from point to point on the earth, being different in different localities, but as it has been found that the earth's magnetic poles are in constant motion, it undergoes certain changes from year to year.

In addition to the variation, the compass ordinarily has a still further error in its indications, which arises from the effect exerted upon it by the masses of magnetic metal within the ship itself. This error is known as the deviation of the compass.]

Power Gradually Diminishes.

To the Editor of MoToR BoatinG, Sir:

I would like to have your valuable advice on the following queries:

I have a 27' hunting cabin cruiser with 8' beam, converted, as I am told, from a Barnegat Bay surf boat. As far as I can ascertain (not having seen the boat out of water), the underbody sections are very flat, while the stern has a false piece tagged on to make a better after deck. She rolls considerably in a seaway in a very annoying manner. Is her shallow underbody responsible for this, and can it be avoided in any way? She makes a sort of roaring noise at the stern occasionally as though sucking down air. The motor is a single cylinder, 2 cycle, 2 port, with a fixed make and break spark and is 5¼" bore by 6" stroke, and runs 400 to 500 revolutions. The present propeller is a three blade wheel, 18" diameter, pitch unknown, having broad blades with rounded tips. I have another wheel which was originally on the boat, 22" diameter with straight edge blades and square tips, which the former owner says gave much better speed than the one at present installed. My speed at present is 6¼ miles per hour, with tide, in the Delaware, which I estimate runs at least two miles per hour. What size wheel do you suggest to improve the speed? The motor is equipped with what I take to be an old time large cast brass generator valve, having a very thin copper pipe connection with gas tank. When the motor is started, it will run with throttle one-half open for about fifteen minutes and then gradually slow down. Upon closing throttle a notch or two it picks up again for a few minutes longer, then repeats former antics, till clutch has to be pulled out to prevent stalling. It will then give a peculiar cough at generator and start right in with full power as before for another 15 minutes. Is this lack of gas because of small capacity of pipe? What size copper pipe should be used? To equip this motor with a carburetor, what size carburetor would be required? The generator valve is cast integral with the base plate of motor and is fastened with six studs. I would have to have another plate cast with hole of right size tapped for check valve and carburetor.

I realize I have been unable to give you sufficient data about boat, etc., for accurate statements on your part, but I hope you will be able to give me a rough estimate about propeller. Would also ask what h.p. you think motor develops?

W. C., Philadelphia, Pa.

[The average speed of only 5½ miles an hour with your 27' cruiser, equipped with a single-cylinder, two-cycle motor 5¼" x 6", does seem very slow indeed. If this motor is in good condition and of good design it should readily develop about 7 h.p. at 450 or 500 revolutions per minute. This, it seems, should give you an average speed of at least 7 miles an hour without any difficulty.]

We believe your wheel is somewhat too small, and if your boat were equipped with one having 3 blades, 20" in diameter, and 24" pitch, which, if turned at 400 revolutions per minute, should give you considerably better speed than you are getting at the present time.

It is not an uncommon occurrence to have a boat of your type roll considerably in a seaway, and this cannot be corrected to any appreciable extent. The addition of ballast might help to some extent, but the proper location for this can only be determined by a little experimenting. Some people claim that the addition of bilge keels will help a boat of this character somewhat, but it never has been our experience to note very much improvement in this respect.

We believe you have one of the old time vaporizers or generating valves on your engine, which were so delicate in their adjustment that they often produced just the kind of results which you write us about, although it may be that your copper feed pipe is slightly too small, or that the level of your tank is not raised high enough above the vaporizer to produce a constant gasoline pressure at all times, and thus give a steady flow of gasoline to the motor. If there is not much difference of level between the vaporizer and the tank, the delicate adjustment of the old time vaporizer would produce just such an experience as you are having.

The gradual slowing down is caused by too much gasoline, which you correctly rectify by closing up the needle valve a trifle, but this evidently cuts the supply off too much and causes back-firing which results in a very insufficient supply of fuel. A 1" carbureter replacing the vaporizer should correct this fault if the tank is high enough. We do not think it should be necessary to have a new base plate cast, as a hole for the new carbureter lead could be bored and tapped out in the present base plate. If your engine happens to be one which has a base plate on each side, as many of them have, it might be well to tap out the plate on the opposite side from the one now used by the vaporizer. In this way you can still leave your engine equipped with its present vaporizer and have a new carbureter on the opposite side. Sometimes very good results can be obtained in this manner by using either the carbureter or the vaporizer, or both at the same time, for certain results of the boat and engine.]

A Trip to Florida.

To the Editor of MoToR BoatinG, Sir:

I expect to make a trip to Florida via the inland route in the near future and would appreciate any information in reference to same.

No doubt you have published articles about this trip, but as I am away from home a great deal the magazine failed to reach me.

In the July number you issued a chart of the Hudson. Have you a similar one of the Florida trip?

My captain is acquainted with the journey as far as Norfolk, beyond that he does not know.

E. J. M., Philadelphia, Pa.

[We have no chart similar to ours of the Hudson River. However, in our October, 1913, issue we published an article on this subject, giving many points of interest, such as gasoline stations, points of supply, etc., which should prove of value to you.]

We would suggest that you obtain from the Department of Coast and Geodetic Survey, Washington, D. C., a copy of their Inside Route Pilot, New York to Key West, which sells for the sum of 30 cents.

We would also suggest that you correspond with Lieut. W. C. Stiles, of Norfolk, Va., who has considerable information about this route, and has written us that he would like to correspond with yachtsmen desirous of making this trip with the idea of giving them the benefit of his experience on these waters.]

Power for Maximum Speed.

To the Editor of MoToR Boating, Sir:

Although not on your subscription list, I am a constant reader of your excellent publication, and by virtue of this fact will presume to solicit your advice. Have built from my own designs, or rather according to my own ideas, a 12' hydroplane hull, with a beam 3' 6", and depth amidships of 20", the frame is of oak, and the planking is $\frac{1}{4}$ " cypress, except decks, which are $\frac{1}{4}$ " of same material. This hull has a slight "step" considerably aft of amidships, and is constructed with air chambers fore and aft, taking up half its length. There are other features, but I will not disclose them at this writing. However, should this experiment prove successful, will favor you with photo and details later, if desired.

I desire maximum speed, and ask your opinion as to power plant, number of revolutions, size and pitch of propeller, the limit of weight for power plant, and speed you would expect, assuming, of course, that the hull is properly designed and constructed. Should you recommend a reversible wheel for boat of this type—if not, why not?

O. E. L., Burlington, Iowa.

[Of course, you realize that we have not seen this boat or her lines, and have not enough information about her to advise you exactly in many respects. However, we would suggest an engine weighing not over 250 lbs., either two or three-cylinder, and probably of a 2-cycle type. This motor should not weigh over 15 lbs. per horsepower. The revolutions should be somewhere between 900 and 1,200 per minute. A 20-horsepower motor having these characteristics should give you a speed of over 20 miles an hour.

We cannot advise you as to the proper diameter and pitch of the propeller, without knowing which one you decide upon, as these all depend upon the power and revolutions of the motor chosen. If you will give us this data, we will be pleased to advise you as to the proper wheel.

As to whether you equip your boat with a reversible wheel or not is a matter of personal preference, and we are not in a position to advise one way or another on this point.]

What Is a Hydroplane?

To the Editor of MoToR Boating, Sir:

Will you kindly tell me what the picture on the enclosed clipping is called and what a hydroplane is?

I had an argument as to whether this is called a hydroplane or not. I said it was a hydroplane, and the other party said it was just called a motor boat.

L. F. G., Chicago, Ill.

[This type of boat is known as the hydroplane. This particular boat happens to be "Baby Reliance," a 20-footer, with 180-h.p., 8-cylinder Sterling Motor, which has won many races during the past summer, being capable of about 45 miles an hour.

Just what a hydroplane is, is hard to put into words. Strictly speaking, any boat which "planes" is a hydroplane. How to determine whether she planes or does not plane is another question. In a fast displacement boat when she gets up a speed, the bow usually rises and the stern settles. But in a hydroplane, the first step is in the bow rising, then the stern comes up, and the bow drops to a lower level, and the whole boat skips along on the surface of the water, so to speak.

The definition of a hydroplane as given by the American Power Boat Association is as follows:

"A hydroplane is a boat whose propeller acts in or against the water, and which has one or more of the following characteristics, viz.: (A) One or more breaks in the longitudinal continuity of the immersed surface, or an underbody having one or more lifting surfaces. (B) An area of immersed transom exceeding 50% of the immersed midship section area. (C) A rating of more than 17 times the square root of the load waterline length."

Small Motor in a Cruiser.

To the Editor of MoToR Boating, Sir:

Although I have just subscribed for MoToR Boating, I have been a constant reader for some time and notice that you are willing to offer suggestions and answer the questions of your readers.

I have just purchased a marine type motor, 4 cylinder, 4 cycle, $3\frac{1}{4} \times 3\frac{1}{2}$; it had formerly been used in a 30' cruiser, and the owner claimed that it turned a 19-inch blade, pitch 17" or 16" at 900 revolutions, and that he acquired a speed of a little better than 9 miles, the number of blades was not mentioned.

As this motor is not manufactured at this time, I am rather at a loss where to look for information, so thought you might be able to help me out.

I am laying the keel for a 25-foot bridge deck cruiser and want to put this motor in her; can you

give me some idea of the diameter and pitch, number of blades, etc., that this motor will successfully turn over and the number of miles per hour she should drive a boat of this size?

The boat itself will draw between 30 and 35 inches of water and the bow will not be too blunt, although she is a good sea boat and not built for speed, but comfort.

The nearest model of this boat will be found on page 22 of the October number of MoToR Boating. I should have mentioned that this motor is rated at 16-20 h.p.

F. H. H., Watertown, Mass.

[While we are not personally acquainted with this motor, yet we are inclined to doubt the feasibility of using a motor of this type and size in a heavy cruiser. A speed of 8 miles an hour in a boat of this type is very good indeed, and if the engine is able to turn a 19" diameter propeller 900 revolutions a minute you certainly have obtained a fine engine. The average motor of these dimensions should develop in the neighborhood of 14 h.p., and we have never heard of a motor of this power being able to turn a wheel of this size anything like 900 r.p.m.

However, if you are certain that you are getting what the former owner claims for his motor, we would suggest for the best efficiency a wheel 17" in diameter by 16" pitch, which, we believe, a motor of these dimensions should be able to turn at a speed of about 800 r.p.m., and should give you a speed of approximately 8 miles per hour. You will see that we are suggesting a wheel considerably smaller in both diameter and pitch than the former wheel was, and still keeping it down to a lower r.p.m.]



Capt. Crouch, of Milwaukee, Wis., getting points from the designs in the Buyers' Reference and Export Number of Motor Boating.

Various Kinds of Fastenings.

To the Editor of MoToR Boating, Sir:

As I am a reader of your valuable magazine, I would like to ask a few questions. What is the best way to fasten the planking of a boat of a V-bottom type, frames $1\frac{1}{4} \times 2\frac{1}{2}$? Which are the best between nails and screws and why? I want to use galvanized fastenings, as they are much cheaper than brass.

B. S., Aurora, Ill.

[We do not believe there is such a thing as a "best method." Everything depends upon the manner in which the work is done, and the service to which the boat is to be put. For fresh water service, such as we judge you intend to sail upon, we can see no great advantage of copper fastenings over galvanized iron, yet for salt water work this statement might not be absolutely true. Brass screws are used in many cases and give entirely satisfactory results, but, of course, the labor and cost are greater than with galvanized fastenings, and it is simply a question which the user must settle for himself whether the service from the latter, with the additional cost, is enough to give them preference over the galvanized fastenings. Many boat owners claim that if screws are used in fast speed boats, with high-powered engines, which are subject to a considerable amount of vibration, that the screws tend to work loose in time. However, advocates of the brass screw system of fastening claim that this seldom, if ever, happens. From the above you will see that any of those methods mentioned are satisfactory, if the work is properly and carefully done.]

Motor and Propeller Outfit.

To the Editor of MoToR Boating, Sir:

Will you kindly give me your opinion about the following:

1. Would you advise a two or three cylinder, 6 h.p. motor (two cycle) for installation in a twenty-foot, V-bottom boat of medium weight?
2. Are the advantages claimed for the four cycle, six cylinder motors present in the two cycle, three cylinder? The advantages I am thinking of are those of lack of vibration, and general smoothness in their vibration. No dead center, etc.
3. What propeller is suitable for an 18-foot runabout with a single cylinder, 6 h.p. motor? The propeller now in use allows the motor to race and is undoubtedly too small. I believe the motor should turn about 400.
4. What propeller for 19½-foot, V-bottom runabout and 15 h.p. motor, 3 cylinder, turning about 1,200?

E. C., Plattsburg Barracks, N. Y.

[We cannot advise you as to which is better, a 2 or 3-cylinder motor for installation in a 20' V-bottom boat. Either of the two types will work out very well indeed, and the choice is more a matter of personal preference than anything else, provided a motor of the correct weight and revolutions per minute is chosen.

A 3-cylinder, 2-cycle motor should be as well balanced as a 4-cycle, 6-cylinder type is.

The proper propeller for an 18' runabout with a 6-h.p. motor, which develops its power at 400 revolutions, would be one having three blades, 19" in diameter by 30" pitch. Of course, you realize we are taking your word for the statement that your motor will deliver this power at 400 revolutions per minute, but you have given us no data to allow us to make sure of this fact ourselves. Also you have not given us any data about the boat; we must base the above statement on the average open boat of this length.

For the average 19½' V-bottom boat, equipped with a 15-h.p. motor, which develops its power at 1,200 r.p.m., the proper wheel would be one having three blades, 14" in diameter by 16½" pitch.]

Clutch Slipping.

To the Editor of MoToR Boating, Sir:

I wish to acquire some information and I am afraid I cannot give you enough data to enable you to answer intelligently. However, my boat is 26 feet long, 5 feet beam, ordinary type runabout with flat after section, $\frac{3}{4}$ " planking, oak decks and trim, engine under oak hatch, making boat a fairly heavy type. Engine is Auto type, 40 h.p. (in car), 4½" bore by, I presume, 5" or 5½" stroke, dual duplex, etc. Boat makes about 15 miles per hour, and swings a 20-3 blade, 28 pitch. The clutch slips. Do you think clutch, which is strictly for auto usage, is not strong enough, or is wheel in your estimation too large or pitch too great? Could you suggest a wheel?

I might add the power is transmitted through a universal at, I think, not more than 5 or 7 degrees. Could you also say what would be the most economical speed of engine?

V. J. E., Ottawa, Canada.

[Your motor should develop in the neighborhood of 25 h.p. at 900 r.p.m. in a boat, and should expect a speed of about 16 miles an hour, if your boat is not too heavily built.

The proper wheel for this outfit would be one having 3 blades 17" in diameter by 24" pitch. An auto clutch is not suited for motor boat use, especially if the size of the propeller which you use keeps the revolutions of your motor down to less than 900 or 1,000 r.p.m. The way to remedy the slipping clutch would be, of course, to decrease the size of the propeller in order to speed up the engine, so that the power transmitted per revolution would be relatively less. A flexible coupling might be used to advantage between clutch and shaft.

If, with the present wheel, the engine is not turning up at least 900 r.p.m., we would suggest the wheel which we have recommended, and if it still falls below 900 r.p.m., then about the only alternative is to put in a marine reverse gear.]

Wheel for Bumblebee.

To the Editor of MoToR Boating, Sir:

I have a 13' Bumblebee hydroplane which weighs 175 lbs. For this hull I have a 6 cylinder, two cycle, three and a half bore by the same stroke. The motor weighs 145 lbs. and the normal speed of it is sixteen hundred. The total weight of hull, motor and equipment is four hundred and seventy pounds. What wheel would you advise me to use, and what speed should I expect? Would a wheel 16" in diameter, and 32" pitch, requiring 15 h.p. per 1,000 r.p.m., be all right for this hull?

S. W. D., West Lafayette, Ind.

[We would suggest a 3-bladed wheel, 15" in diameter by 24" pitch, which, if turned at 1,400 revolutions per minute, should give you a speed of about 26 miles per hour.]

New Things for Motor Boatmen

Two-Cylinder Rowboat Motor.

The Koban Manufacturing Company, Milwaukee, Wis., are putting on the market their Koban rowboat motor which is described as the only two-cylinder rowboat motor made. The engine is a variation of the two-cycle type, with two cylinders directly opposed, and, due to the equal distribution of all reciprocating parts, is said to be absolutely vibrationless and silent. It develops 3 h.p. and sells for \$75.

Rayfield Carbureter.

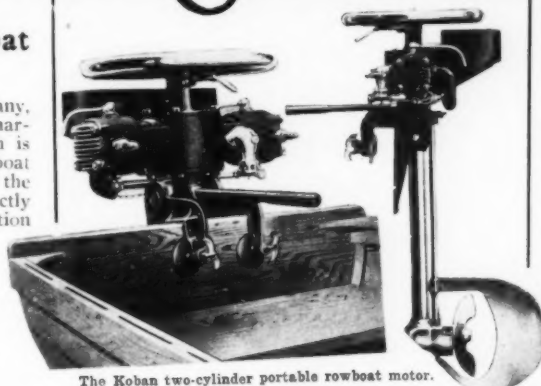
This new Model A Rayfield carbureter, made by Findeisen & Kropf Manufacturing Company, Chicago, and replacing Model D is a water-jacketed instrument made in all sizes, from 1-inch to 3-inch. Advantages claimed for this carbureter are that it has three air intakes, an improved float arrangement, strainer trap, etc., and that it is impossible to make a mistake in adjusting it.

A New Reverse Gear.

The New York Gear Works, Brooklyn, have brought out a new enclosed type ball reverse gear in two models for up to 30 h.p., and up to 40 h.p. One of the features of this oil-tight gear is the elimination of the brake band which sometimes proves a source of annoyance in enclosed gears. Only the fingers are required for adjusting the forward speed, and the reverse mechanism adjustment is said to be automatic.

Vesuvius Plugs.

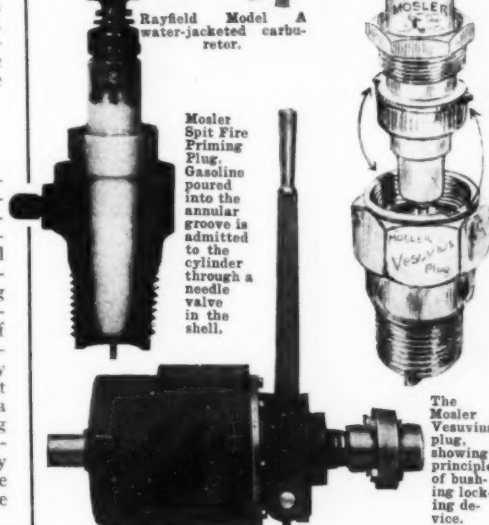
A. R. Mosler & Company, of Mount Vernon, N. Y., are featuring the new "Vesuvius" spark plug which embodies many features of interest. With a view to rendering the plug absolutely gas-tight, the shell is provided with two vertical slots or key-rings into which projections on a bushing fit, thus preventing the turning of the bushing, and, consequently, any movement of the copper-asbestos washer when the packing is tightened. As a result, the only force exerted on the washer is a direct thrust, and there can be no question that a gas-tight joint will be made. The sparking points are provided with knife edges to ensure extra efficiency. The Vesuvius may be easily taken apart and reassembled. The plug is supplied with either imported stone



The Koban two-cylinder portable rowboat motor.



Rayfield Model A water-jacketed carburetor.



Mosler Spit Fire Priming Plug. Gasoline poured into the annular groove is admitted to the cylinder through a needle valve in the shell.

The Mosler Vesuvius plug, showing principle of bushing locking device.

or porcelain insulations, and, in all sizes, at \$1 each. The Vesuvius plug now comes packed in a neat tin box which effectively protects it from injury. As this cylindrical box is provided with a bayonet locking device to hold the cover in place, it makes a very useful receptacle to keep in the tool kit filled with cotta pins, washers, etc.

Prest-O-Lite for Boats.

Adequate lighting aboard a boat is often a problem for the boatman, and acetylene lighting has a good many points in its favor. The Prest-O-Lite Company, of Indianapolis, point out that acetylene gas fixtures can be obtained to fit in with any interior scheme on a boat, and by the use of their Prest-O-Lite tanks, and the Prest-O-Lite, the question of the supply of gas and ease in igniting it at the fixtures is solved. The searchlight can also be operated from the familiar cylindrical tank, and by merely boring a hole and inserting the jet, oil running lights may be converted into gas lights.

Harroun Carburetor.

This kerosene carburetor, marketed by the Electric Renovator Manufacturing Company, of Pittsburgh, is fitted with a pipe through which part of the exhaust is forced, heating the space around the venturi to a cherry red. As the less volatile parts of the fuel are forced in a spiral motion against the heated surface by the suction of the motor they are vaporized.

An Adjustable Piston.

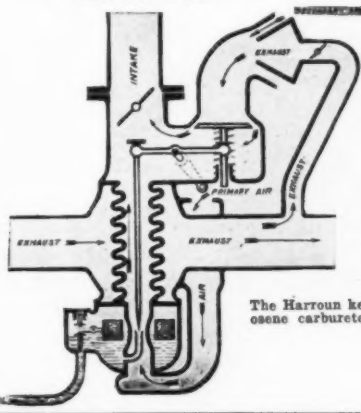
This patented piston manufactured by the Wille Piston Company, Brooklyn, is designed to correct loss of compression in new or old cylinders, and do away with the necessity of reboring cylinders which have become scored. The piston is fitted with a force cap which can be screwed down with a removable key, spreading the compression ring to the desired point, securing compression in the combustion space and preventing wasting of oil and excessive carbonization.

The Remy SL Starter.

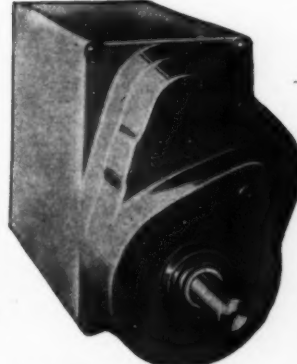
This combined generator and starter is built by the Remy Electric Company, Anderson, Ind., in two sizes with several different windings. It may be termed a "Two-Story" instrument, as the armature of the motor is superimposed over the generator armature, although the field for both is a steel casting.



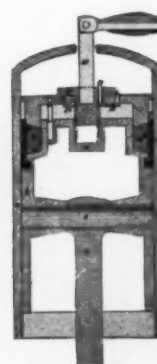
The Prest-O-Lite gas converter fitted to an oil lamp.



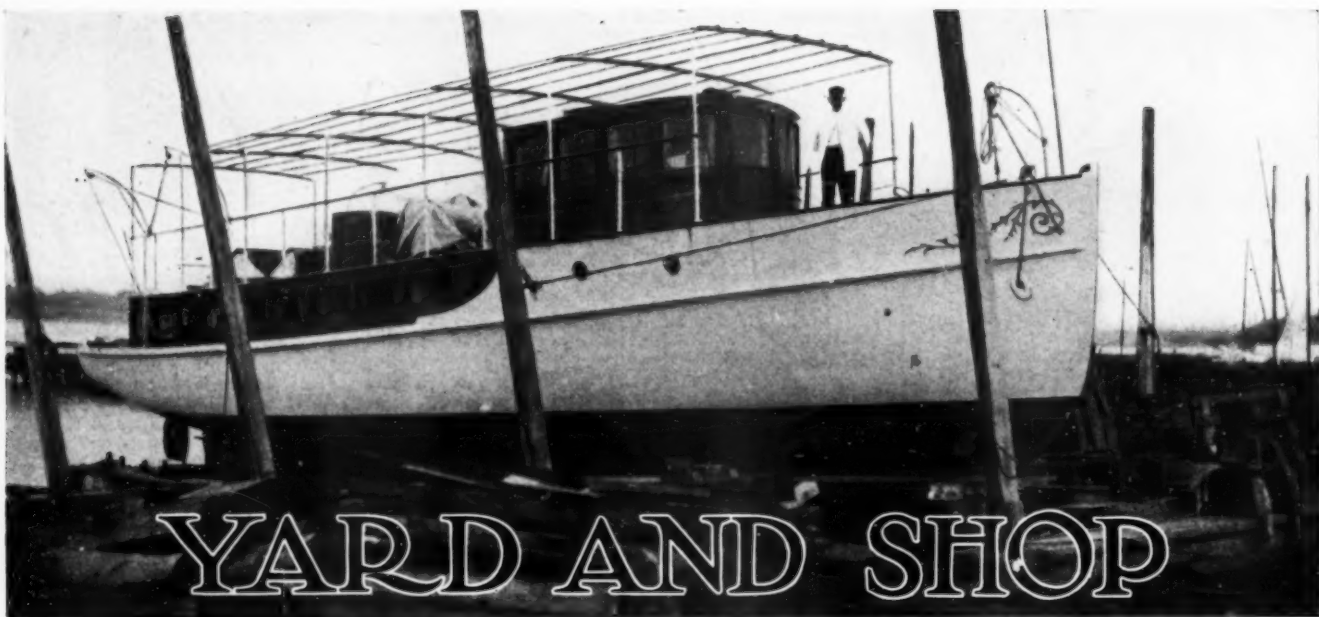
The Harroun kerosene carburetor.



The Remy Model SL combined generator and starter.



The Wille adjustable piston.



YARD AND SHOP

On the ways in the yard of the Greenport Basin & Construction Company, at Greenport, New York.

New Agency for Bridgeport Motors.

The distribution of Bridgeport motors in Eastern Pennsylvania, Delaware and South New Jersey has been placed in charge of Messrs. Carman & Bowes,

Launch and Tug Boat Co., of San Francisco, Cal. This company has the concession for the excursion and sight-seeing launches at the Pacific-Panama exposition to be held in 1915. Crowley No. 19 is the first of the

miles an hour. Her dimensions are 65 feet overall, 17 feet 6 inches beam, and 6 feet draft.

New Factory for Loew-Victor Engine.

The Loew-Victor Engine Company, of Chicago, Ill., have recently moved into their new factory at Oakley and Oakdale Avenues. Their main plant measures 160 x 140 feet, and their test room, having 12 testing stands, is a separate building, 50 x 50 feet, which is connected by overhead trolley with the main building. It is the belief of the company that they now have the most complete test room in the country. The new plant is of the latest construction throughout and was designed and built especially for the manufacture of the Loew-Victor marine engines. Visitors at the Chicago Motor Boat Show will be very welcome at this plant which, at the time of the show, will be in full operation.

New Plant of the DeFoe Boat & Motor Works.

When, on August 19, 1913, fire destroyed the factory, offices, all correspondence, and stock designs of the DeFoe Boat & Motor Wks., Bay City, Mich., it seemed as if a knock down blow had been delivered to this company, but plans for a new and up-to-date boat manufacturing plant were laid the next day, and now the DeFoe Company has about 20,000 feet of floor space given over to the manufacture of both knock-down and finished boats. What seemed at first an



The latest product of the C. C. Smith Boat & Engine Co., which they inform us has done $7\frac{1}{4}$ miles in $7\frac{1}{4}$ minutes, with a 2-mile tide, over an official course.

with headquarters in the Bourse Bldg., Philadelphia. Carman and Bowes are well known to the marine trade in that territory and from now on will specialize on Bridgeport motors in the 2-cycle type and Eastern Standard motors in the 4-cycle type, and devote their entire energies to these two high-grade lines. They will carry stock of both lines, together with repairs for same.

Evinrude Motor Uses Bosch Spark Plug.

The Evinrude Motor Company, of Milwaukee, Wis., has placed with the Bosch Magneto Company, of New York City, one of the largest contracts for Bosch spark plugs ever placed by a concern manufacturing motor boat engines. The particularly hard service that a spark plug is subjected to in the case of the Evinrude outfit makes it necessary that only the best plug be adopted and this choice of the Evinrude Company certainly speaks well for the Bosch plug.

Mullins New Catalogue.

One of the handsomest catalogues of the new year has just been received from the W. H. Mullins Company, Salem, O., manufacturers of pressed steel motor boats, row boats, hunting and fishing boats, and marine engines. This handsome catalogue and other attractive literature will be sent to any prospective purchaser upon request.

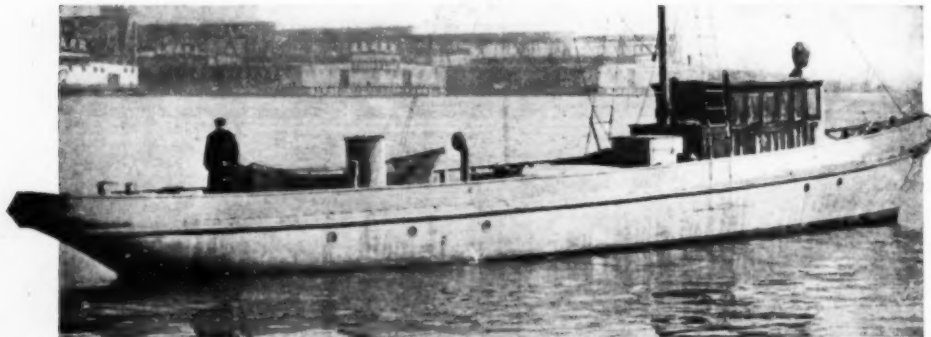
Frisko Standard Engine for Pacific-Panama Exposition Ferry Service.

One of the photographs in this department is of the new launch, Crowley No. 19, owned by the Crowley

fleet that they are having built and will be followed by 23 more boats of the same type and larger. No. 19, which has accommodations for about 150 passengers, is equipped with a 110 h.p. Frisko Standard engine, which drives the boat at a rate of about $10\frac{1}{4}$



Crowley No. 19, a San Francisco work boat, powered with a 110 h. p. Frisko Standard engine, capable of driving her $10\frac{1}{4}$ miles per hour.

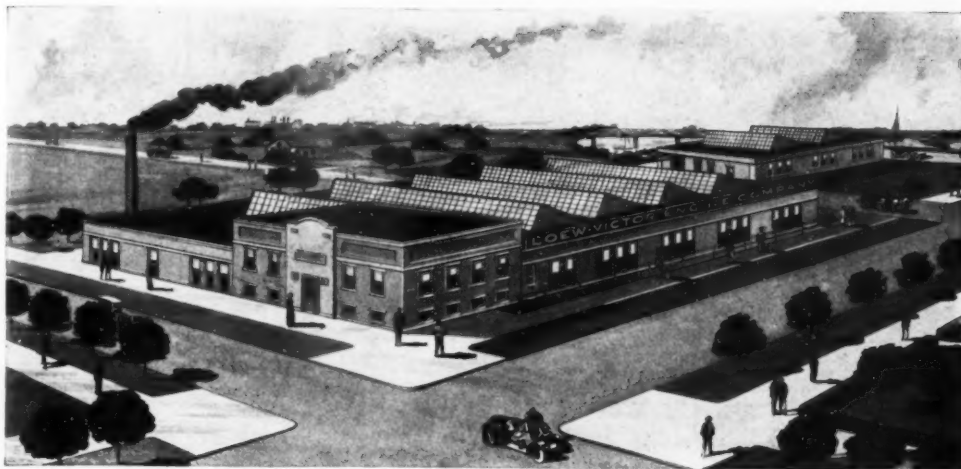


Wissoe, a Boston fishing boat, originally a steam yacht but now equipped with two 70 h. p. Holmes motors, which give her a knot better speed than she had in her steam days.

overwhelming disaster proves itself even now to be an advantage, as the company starts out with an absolutely new and modern line of designs, building forms, etc. This company started in business about eight years ago and they state that since then they have never closed down a day for want of orders. The bulk of their business is in knock-down boats, but they have to their credit some excellent craft, both in the line of open launches and particularly in boats of the larger cabin cruiser type. Numbers of their knock-down boats are shipped to Australia and New Zealand as well as to all European countries, and they are to be found in such out of the way places of the globe as Borneo and Tasmania. While the new factory is double the size of the old plant, we are informed that there is every prospect of its being pushed to its capacity and beyond within the next thirty days.

Racine Catalogue No. 17.

The Racine Boat Company, Racine, Wis., have just issued their new catalogue—No. 17—of cruisers and commercial craft, in which they show their latest designs. Copies of this catalogue will be sent to prospective boat and engine buyers upon request to the factory.



The Loew-Victor Engine Co.'s plant in Chicago. The main building is 160 x 140 feet and the testing room is 50 x 50 feet.

A Hand V-Bottom 21-Miler.

One of the photographs on page 44 is of a V-bottom 24-footer—Pippin—built by the Davis Dry Dock Company, of Kingston, from plans and specifications supplied by William H. Hand, of New Bedford, Mass., and powered with a 20-35 h.p., four-cylinder aluminum-base Sterling engine. The owners of this little craft, Messrs. E. W. Waldron and E. V. Leslie, of Kingston, Ont., state that they are highly satisfied with the entire equipment, as at most they only hoped for 20 miles an hour, but found when they worked her into shape that they could get 21 miles.

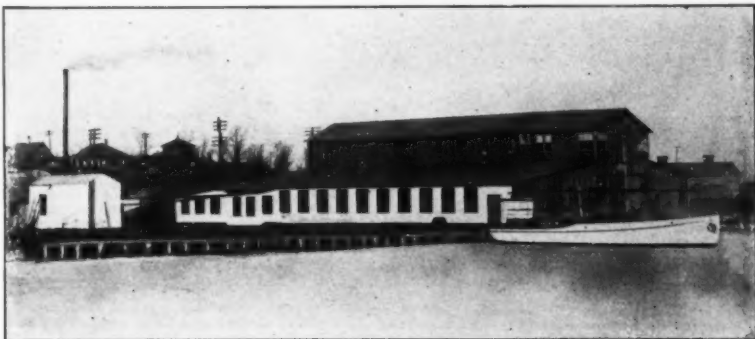
Durkee's Grasmere Factory.

For the third time since its formal opening two years ago it has been found necessary to make additions to Durkee & Co.'s factory at Grasmere. The last consists of a new brick addition to the present main factory, greatly increasing its facilities, as well as a structure intended for storage, surplus stock, etc. The buildings at 2 and 3 South Street have been thoroughly overhauled and made up to date in every way, and all departments are now in the reconstructed building.

7 1/4 miles over a government chart measurement with a two-mile tide in 7 minutes and 15 seconds. You will no doubt hear from this boat in 1914 in many races.

Mosler Licenses.

Up to date the following manufacturers of spark plugs have



Plant of the DeFoe Boat & Motor Works, at Bay City, Mich., replacing the building recently destroyed by fire.



Jas. C. Long, ready to start with her convoy of 4 barges, each weighing about 600 tons. She is powered with a 26-30 h. p. heavy duty Buffalo motor.

Marine Supplies Association Dinner.

The annual meeting and dinner of the Marine Supplies Association will be held on February 14, 1914, at the Hotel Marie Antoinette, Broadway and 66th Street. The dinner, which will be held at 7:15, will be preceded by a meeting at 5:15 p.m. Mr. Thomas Fleming Day will deliver an illustrated address of interest to all marine people. The tickets for the banquet are \$3 and can be obtained from the secretary of the association, Mr. Arthur Falk, 149 Broadway.

A New Speed Boat.

The C. C. Smith Boat & Engine Co., Algonac, Mich., are considerably elated over the performance of the speed boat pictured in this department. In a letter they state in part: "We believe this to be the greatest boat in the world. We drove her

taken out licenses for their spark plugs under Messrs. A. R. Mosler & Co., Canfield patent No. 612,701; Auburn Ignition Co., Auburn, N. Y.; Benford Mfg. Co., Mt. Vernon, N. Y.; Belvidere Screw Machine Co., Belvidere, Ill.; Bosch Magneto Co., New York City; Champion Ignition Co., Flint, Mich.; Champion Spark Plug Co., Toledo, O.; Frontier Specialty Co., Buffalo, N. Y.; Emil Grossman Mfg. Co., Brooklyn, N. Y.; Hartford Machine Screw Co., Hartford, Conn.; Jeffrey Dewitt Co., Detroit, Mich.; Lockwood Ash Motor Co., Jackson, Mich.; C. A. Metzger, Inc., New York City; Oakes & Dow, Boston, Mass.; Rajah Auto Supply Co., Bloomfield, N. Y.; Reflex Ignition Co., Cleveland, O.; Rex Ignition Co., New York City; Sharp Spark Plug Co., Cleveland, O.; Silver Co., New York City; E. O. Williams, Syracuse, N. Y.; and The V-Ray Company, Marshalltown, Pa.

Wolverine Catalogue "O."

We are in receipt of the Wolverine Motor Works' new catalogue, "O," which is just off the press. This catalogue illustrates and describes Wolverine heavy duty marine engines in sizes from 12 to 100 h.p. and fitted to operate on kerosene, gasoline, and in the larger sizes suction producer gas. Copies of this catalogue will be sent to those interested from the factory at Bridgeport, Conn.

Mackay Trophy Won at Record Breaking Speed.

Flying 58 miles in 46 minutes, locating and accurately describing an advancing enemy, and finishing the flight with a glide of 8 miles to within 25 feet of a pre-arranged landing place, won the Mackay Trophy for Lieut. Joseph C. Carberry, Sixth Infantry. The flight was made in the latest Curtiss military tractor delivered to the U. S. Army Aviation Corps at San Diego, equipped with a Curtiss 60-100 h.p. motor. Lieut. Fred Seydel, C. A. C., accompanied Lieut. Carberry, Sixth Infantry. The flight was official observer. The judges were Captain Arthur S. Cowan, head of the First Aero Corps, and Dr. Albert F. Zahm. In connection with this record it is interesting to note that in more than 200,000 miles of passenger travel done in Curtiss flying boats during 1913, mostly by amateur aviators, not a man was injured.

McCullough Returns to Brazil.

David McCullough, who has been demonstrating Curtiss hydro-aeroplanes and flying boats in South America, spent the holidays in New York and is now on his way back to Brazil. McCullough says the interest in boat flying as a sport is very great in Rio. He has taught several men to handle the machine, among them the son of the President of Brazil.

The Bridgeport Motor Co.'s "Jacking" Department.

A photograph in this department shows a corner of the assembling room of the Bridgeport Motor Co., Bridgeport, Conn., in which every Bridgeport motor built is semi-assembled and placed on the "jacking" stand, where it is operated by belt from an overhead jack shaft, and the bearings, working parts, etc., are given a thorough "working-in" oil. This operation is doubly important in Bridgeport motors, because the main crank shaft bearings are handfitted as snugly as possible. The process of jacking gives opportunity of discovering whether these bearings are fitted too closely and at the same time gets all of the working parts in condition for the power test on gasoline which follows. Each motor is jacked from five to ten hours, according to its size, and not infrequently motors are returned to the assembler several times to have bearings refitted before they are finally allowed to leave the jacking department as satisfactory.

The Carter Carbureter.

The H. W. Johns-Manville Co., New York, have recently taken over the control of the Carter carbureter manufactured by the Carter Carbureter Co., of St. Louis, Mo. This device is said to be different in principle from any carbureter on the market in that the supply of fuel is controlled by the suction of the motor instead of by mechanical means, and is, therefore, not only immediately responsive to the motor's demand when accelerating, but is also immediately cut off when the demand ceases, thus eliminating waste of fuel. It is said actually to reduce gasoline consumption 15 to 30 per cent. by breaking up the gas into a mist and thereby producing perfect combustion.

Rushmore Starters for Uncle Sam.

The Elco Company, of Bayonne, N. J.,



This 154-foot yacht is driven by two six-cylinder 200 h.p. Winton Gas Engine & Mfg. Co.'s engines. This boat was built in the Lawley yards from the designs of Gielow & Orr.

has adopted the Rushmore engine starter for six 175 h.p. six-cylinder marine gasoline engines, which have recently been furnished to the United States government. The starter used was the largest size, or Model A, weighing about 65 pounds. This machine is used on large automobiles with a 5-volt battery, but in this case was specially wound to operate with a 12-volt 160-ampere hour battery. It turns the engine over at 126 r.p.m., taking a current of 350 amperes at 11 volts, corresponding to 4.35 h.p. delivered. Its working efficiency is said to be 84½ per cent.

A Correction.

In the tables of marine motors published in the December issue of *MoToR Boating* we find that



Marie E., a Bronx, N. Y., 30-footer, whose 9 h. p. Buffalo engine gives her a speed of 9 miles per hour.

through mistake we gave the wrong horsepower rating of some of the motors manufactured by the Gilmore Motor Mfg. Co., Detroit, Mich. The correct ratings of the motors concerned are as follows: Where, in the first column, on page 61, we gave the rating for the single-cylinder Gilmore as 1 h.p., the correct figure is 1½; on the same page, the two-cylinder engine should read 3½ h.p. instead of 1½; on page 64, in the first column, their three-cylinder motor should be 5½ h.p. instead of 3½, and in the third column of the same page, the rating of the four-cylinder Gilmore should be read 8 h.p. instead of 5½ h.p.



David H. Purves, president of the Viper Company, Ltd., a notice concerning the product of which appears in this section on page 68.

Michigan Wheel Co.'s Eastern Distributor.

Mr. Oluf Mikkelsen, 69 Cortlandt Street, New York, is acting as the Eastern distributor of the Michigan Wheel Co., of Grand Rapids, Mich., and has put in a large stock of their reverse gears, propeller wheels and a complete line of motor boat accessories. Mr. Mikkelsen will give his customers prompt and courteous treatment, and a saving in time and freight will be effected by those living on the seaboard through dealing directly with him.

New Sterling Catalogue and Folder.

The Sterling Engine Co., Buffalo, N. Y., have just received from their

printers copies of their 1914 catalogue, which is said to be a radical departure from any catalogue yet printed by them or by any one else, for that matter. It is a 48-page book, in which one sheet is devoted to each of the 12 models of Sterling engines, a complete description occupying one side of the sheet, while the other has specifications, foundation plans, prices, etc., thus saving looking back and forth through the book, looking for the description of any one model. Over sixty photographic reproductions of various boats are distributed through the book, and there are four pages in two colors of 12 famous boats powered with Sterling engines. The Sterling Company has also just gotten out a folder illustrating and describing nine of their engines, which should be of interest to boatmen. Either or both of these pamphlets will be sent on request to the factory.

George J. Tuckett Enters Marine Hardware Industry.

Mr. George J. Tuckett, a prominent Canadian tobacco manufacturer and a well-known yachtsman both in Canada and the United States, has become actively associated in the marine hardware industry in the capacity of president and treasurer of The Hall-Tuckett Co., of Rochester, N. Y., which firm will continue the marine hardware business formerly conducted by the Hall-Gibson Co. This business will be continued as heretofore, only with increased facilities and a larger and more prominent showroom. They will carry a large stock of yacht and motor boat supplies, said to be unequalled between Chicago and New York.

The W. S. Hall Co. will confine its attention exclusively to the manufacture of "Reliance Rochester" steering wheels.

The Sterling Engine Abroad.

The popularity of American marine engines in the export field is rapidly growing and orders for the higher-priced American engine are being received from all parts of the world. Probably one of the most interesting cases is that of an order for five engines from Constantinople, Turkey, recently received by the Sterling Engine Co. This order amounted to \$3,685, and proves that there is a decided demand for the American engine in the export field. The Sterling Engine Co. also report that they have just received an order from Cartagena, Colombia, for one of their Sterling Kid 10 h.p. enclosed motors, price \$550, this unique little engine to be installed in a 20-foot hand V-bottom boat. Another interesting sale by the same firm is that of a four-cylinder 20-35 h.p. engine to a large firm in Copenhagen, Denmark. This firm will handle Sterling engines for the whole of Scandinavia, excepting Sweden, and are laying out an energetic campaign to obtain business.

Hyde Propellers Do Good Work.

The Atlas Gas Engine Co., of San Francisco, Cal., recently shipped two launches to Mazatlan, Mexico, for the use of the Mexican government. The boats were 28 feet long, of 6-foot beam, and were equipped with 12 h.p. Atlas engines. The requirements of the purchasers were that the boats make 9 miles an hour. At first the Atlas people told them that such a speed under the circumstances was impossible, but after tuning up the engines so that they delivered nearly 20 h.p. each on the brake, they installed them and



Pippin, a 24-foot Hand V-bottom runabout, owned in Kingston, Ont. Her four-cylinder 20-35 h. p. Sterling engine gives her a speed of 21 m. p. h.

started experimenting with propellers. They tried every propeller made, both on the east and west coasts, and finally decided on Hyde wheels, 26 in. diameter, 28 in. pitch, three bladed and with large surface. With these wheels installed 9 miles an hour was obtained over a measured course, which was a phenomenal speed for this class of boat and its equipment.

A Busy Motor Tug.

James C. Long is owned by the Illinois & Mississippi Canal Commission and is used for towing on the canal. The shows her ready to start

pushing four barges loaded with heavy stone, weighing about 600 tons each. Upon occasion, she has pushed much heavier loads than this. Her speed is only three or four miles per hour on account of the difficulty in steering at a higher speed, but she has had no trouble in handling the heavy tows. Her power plant is a 26-30 h.p. heavy duty Buffalo engine. Since July last she has covered about 2,585 miles and a record has been kept of her gasoline consumption. It amounts to 1,287 gallons.

(Continued on page 68)

Suggestions for Handicapping

(Continued from page 10)

boat in shall receive a beaten allowance of 1% of its time for every time so beaten. This beaten allowance of 1% shall be added to its best trial time or handicap time, and shall apply successively on its next heat or race. In case of disqualification, the boat receiving the heat shall receive its 1% allowance, but the disqualified boat shall not be entitled to any allowance, and its time also shall be disregarded.

Any boat beating its best time the second time shall be penalized an amount equal to three times such excess. The new time, plus the penalty, shall be known as its best time, and shall be its handicap time in its next race.

The heats in every series shall be run consecutively, or finished before any new series is started.



A 22-foot runabout, which will be exhibited at the New York and Chicago shows by the Valley Boat & Engine Co., of Saginaw, Michigan.

A boat owner may tender the regatta committee a new time for his boat at any time, but such new time can not be accepted unless it is faster than its previous trial time or handicap time.

Any boat interfering with the progress of any other boat in race, cutting the course or touching the buoys, shall be disqualified from such race or heat.

A boat winning a heat or race in slower time than its trial or handicap time, after having received a beaten allowance, shall start its next race under such time, providing it is not slower than its starting time in the race.

FEBRUARY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

CALENDAR

MARCH

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

RACING.

Mar. 30-Apr. 4—St. Augustine, Fla., speed boat races.

June 6—Philadelphia to Bermuda.

June 20—Annual Ocean Race, New Rochelle to Block Island, 100 miles.

June 27—Sixth Annual Race, New York to

Albany and return, 235 nautical miles. New York Motor Boat Club.

July 4—Colonial Yacht Club Race, New York to Cornfield Light Ship and return.

July 22—D. R. Y. R. A. Cruiser Race, Philadelphia to Baltimore, 369 nautical miles.

July 29-30-31—Gold Challenge Cup Races for speed boats, Lake George, N. Y.

SHOW DATES.

Jan. 31-Feb. 7—New York Motor Boat Show.

Feb. 21-28—Toronto National Motor Boat Show.

Feb. 28-Mar. 7—Chicago Motor Boat Show.

Mar. 21-28—Maritime Motor Show, St. John, N. B.

MOTOR BOATING ADVERTISING INDEX

A		I	
Aaron Automatic Bilge Pump Co.	66	Packard Electric Co.	128
American Engine Co.	127	Page Engineering Co.	108
American Life Saving Garment Co.	68	Palmer Bros.	104
American Launch Co.	127	Pearl Machine Co.	84
American Motor Parts Co.	68	Peerless Marine Engine Co.	105
Anderson Engine Co.	110	Pioneer Boat & Pattern Co.	118
Anderson Spark Plug Co.	84	Pneumatic Mfg. Co.	66
Apple Electric Co., The.	72	Poekel, T. S., & Co.	65
Aristos Co., The.	68	Prest-O-Lite Co.	109
Atkin-Wheeler Co.	65	Pyrene Mfg. Co.	118
Automatic Bilge Bailer Co.	68		
Automatic Machine Co., The.	110		
B		R	
Balbridge Gear Co., The.	127	Racine Boat Co. (Racine).	128
Bath Marine Construction Co.	120	Red Wing Motor Co.	123
Binnay, Arthur.	65	Regal Gasoline Engine Co.	94
Bolinders, J. & C.	131	Reid Wheel Co.	84
Bosch Magneto Co.	68	Reliance Boat	61
Boston Varnish Co.	68	Rice Bros. Co.	84
Boucher Mfg. Co., H. E.	68	Richardson, G. R.	84
Bowes & Mower.	56-57-65	Ritch, W. T.	84
Breaznell, Jos. H.	86	Robbins Co., L. D.	84
Bridgeport Bronze Marine Paint Co.	68	Roberts Motor Co.	104
Bridgeport Motor Co., Inc.	89	Robertson Bros.	84
Brooks Mfg. Co.	101	Rose Mfg. Co.	70
Brown-Collins Gas Engine Co.	68		
Bruns, Kimball & Co., Inc.	65-100		
Bryant & Berry Co.	127		
Buffalo Gasoline Motor Co.	114-115		
Byrne, Kingston & Co.	100		
C		S	
Caille Perfection Motor Co.	74-75	S. R. Mfg. Co.	104
Camden Anchor-Rockland Mach. Co.	68	Samson Cordage Works.	70
Campbell Co., A. S.	68	Sands & Sons Co., A. B.	76-77
Cape Cod Power Dory Co.	97	Scripps Motor Co.	116
Carlisle & Finch Co.	110	Seaman, Stanley M.	47
Carlyle Johnson Mach. Co., The.	124	Shaw Propeller Co.	128
Carpenter & Co., Geo. B.	120	Sherman, Eugene M.	82
Chelsea Clock Co.	68	Smalley-General Co.	70
Chicago Varnish Co.	93	Smith & Co., Edward.	70
Classified Advertisements	63-64	Smith-Serrell Co., Inc.	94
Cleveland Auto Boat Mfg. Co.	110	Snow & Petrelli Mfg. Co.	103
Coe (W. H.) Mfg. Co.	68	Standard Co., The.	78-79
Columbian Brass Foundry.	97	Standard Gas Engine Co.	126
Cosmopolitan	84	Standard Motor Construction Co.	2nd Cover
Cox & Stevens.	46-53-65	Standard Oil Co.	70
Cragg Motor Mfg. Co.	72	Stanley Co.	70
Craig, James.	65	Star Ball Retainer Co., The.	118
Crockett Co., The David B.	82	Stearns-McKay Mfg. Co.	112
Cuno Eng. Corp., The.	72	Sterling Engine Co.	Back Cover
Curtiss Co., J. H.	66	Sturtevant (B. F.) Co.	70
Curtiss Aeroplane Co., The.	70		
D		T	
Darrow Steel Boat Co.	72	Tams, Lemoine & Crane.	49
Davis Boat Works Co., The.	66	Thermos Silencer Works.	66
Dayton Electrical Mfg. Co.	72	Thomas & Co., W. E.	70
DeFoe Boat & Motor Works.	126	Tiebout, W. & J.	70
DeLong Engine Co.	82	Times Square Auto Co.	126
Detroit Boat Co.	72	Toppan Boat Mfg. Co.	60-70
Detroit Engine Works.	68-82	Torrey Roller Bushing Works.	126
Detroit Lubricator Co.	129	Trebert (H. L. F.) Engine Works.	70
Doman Co., H. C.	129	Trimount Rotary Power Co.	118
Durkee & Co., C. D.	98	Tuttle Motor Co.	70
E		U	
Edison, Inc., Thomas A.	101	Universal Machine Co.	112
Elec-Bayonne (The Electric Launch Co.)	2nd Cover	Universal Mfg. Co.	91
Electric Goods Mfg. Co.	72	Universal Motor Boat Supply Co.	112
Electric Tachometer Co., The.	72	Universal Safety Mattress Co.	70
Emmons Specialty Co.	72	Upson-Walton Co., The.	70
Erd Motor Co.	88		
Evans Stamping & Plating Co.	66		
Evinrude Motor Co.	85		
F		V	
Fairbanks, Morse & Co.	99	Valentine & Co.	67
Fairhaven Iron Foundry Co.	110	Valley Boat & Engine Co.	130
Fay & Bowen Engine Co.	73	Van Blerck Motor Co.	80
Fellows Yacht & Launch Co.	65	Vim Motor Co.	130
Ferdinand & Co., L. W.	120	Vulcan Engine Works.	112
Ferro Machinery & Foundry Co.	132		
Fiske Bros. Refining Co.	72		
Fogg, M. W.	110		
Frisbie Motor Co.	104		
G		W	
Galusha, A. L., & Co.	66	Water Craft Co., The.	108
Gardner, Wm., & Co.	48	Waterman Marine Motor Co.	130
Gas Engine & Power Co. and Chas. L. Seabury Co., Consolidated	58-59-98	Watkins Motor Co., The.	70
General Electric Co.	81	Watts, J. Murray.	54-55-65
Gielow & Orr.	50	Whitaker, Morris M.	65
Gies Gear Co.	72	Whittelsey & Whittelsey.	65
Gill & Sons, P. H.	120	Wicker-Kraft Co.	118
Gillespie, Chas. H. & Sons.	81	Wilcox, Crittenden & Co., Inc.	92
Globe Gas Light Co.	82	Wille Piston Co.	66
H		Y	
Hacker, John L.	113	Yankee Co., The.	68
Hacker, John L.	68	Youngs, Wm. P. & Bros.	70
Hall Co., W. S.	129		
Hall Gas Engine Co.	86		
Hand, Wm. H., Jr.	65		
Harper's Bazar	72		
Harris (A. W.) Oil Co.	86		
Hearst's Magazine	82		
Henke Mfg. Co.	86		
Henrick's Novelty Co.	124		
Herbert & Huesgen.	86		
Hickman, J. Alfred.	99		
Holmes Motor Co., Inc., The.	3rd Cover		
Hopkins Mfr. Co., Bayard.	86		
Howard Cruiser Works.	86		
Hyde Windlass Co.	102		
Hydrex Silent Exhaust Works.	110		
J		O	
Janney, Steinmetz & Co.	125	Oakes & Dow Co., The.	122
Jencick Motor Co.	86	Oshkosh Metal Products Co.	122
Jennings Yacht Agency.	52		
Jewel Electric Co.	86		
Jones, Frank Bowen.	51		
Jones, Frank Bowen.	86		
Jordan Bros. Lumber Co.	86		
K		P	
Kahlenberg Bros.	125		
Kenyon Co., R. L.	71		
Kermath Mfg. Co.	90		
Koban Mfg. Co.	125		
Koven & Bros., L. O.	86		
Krice Carburetor Co.	110		
Kroh Mfg. Co.	118		
Kuhls, H. B. Fred.	86		
L		Q	
Lamb Engine Co.	87		
Lawley, Geo., & Son, Corp.	102		
Leary Gasoline Engine Co.	82		
Lebby Engineering Co., The.	82		
Lecce-Neville Co., The.	70		
Lisk, Geo. A.	70		
Lobee Pump & Mach. Co.	82		
Lockwood-Ash Motor Co.	92		
Loew-Victor Engine Co.	3rd Cover		
Luders Marine Construction Co.	62-65		
M		R	
McClellan Top & Hood Co.	70		
McFarland Foundry & Machine Co.	120		
McQuay-Norris Mfg. Co.	118		
Mallison, J. H.	82		
Marburg Bros., Inc.	82		
Marine Compass Co.	82		
Masten Co., Theo. H.	82		
Mathis Yacht Building Co.	122		
Matthews Boat Co., The.	93		
Maximotor Makers	85		
Mechanical Devices Co., Inc.	108		
Mercury Motor Co.	122		
Mianus Motor Works, The.	68-111		
Michigan Steel Boat Co.	86		
Michigan Wheel Co.	103		
Miller, Chas. E.	120		
Mills, R. S.	112		
Milton Boat Works.	108		
Milwaukee Yacht & Boat Co.	119		
Monarch Valve Co.	125		
Monitor Boat & Engine Co.	84		
Morgan Mfg. Co.	112		
Morristown Boat & Engine Works.	108		
Morris Co., A. S.	112		
Mosler & Co., A. R.	121		
Motsinger Device Mfg. Co.	84		
Mullins, W. H., Co.	68		
Murray & Tregurtha.	108		
Murphy Varnish Co.	70		
N		S	
Narragansett Chemical Co.	84		
National Economic Supply Co., The.	70		
National Gear Co.	84		
Naval Architects & Yacht Brokers.	65		
New York Gear Works.	66		
New York Yacht, Launch & Engine Co.	112		
Niagara Motor Boat Co.	130		
Niagara Motors & Mfg. Co., Inc.	124		
Nichols Co.	84		
Nicholson File Co.	84		
Nock, Frederick S.	65		
Northwestern Motor Co.	128		

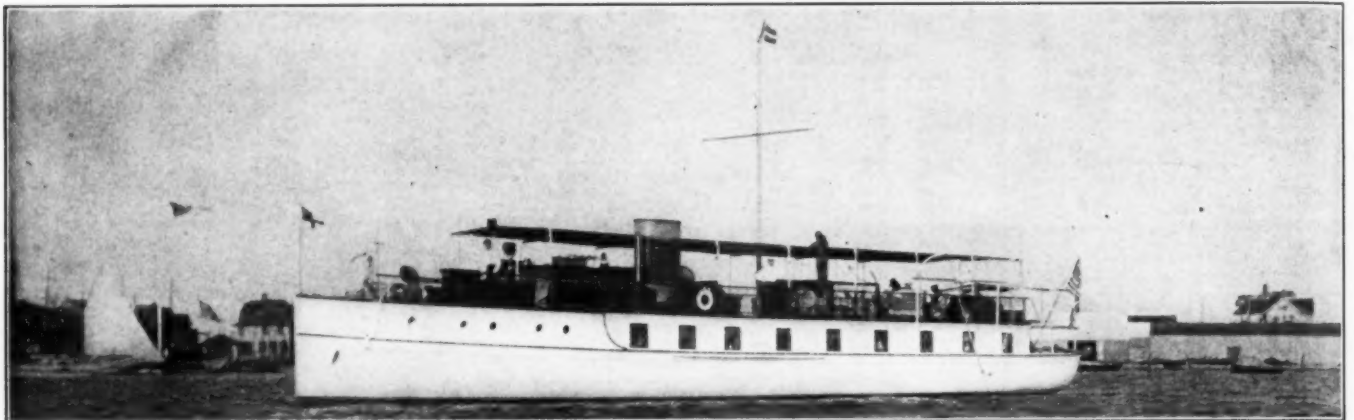
COX & STEVENS

NAVAL ARCHITECTS
AND
YACHT BROKERS

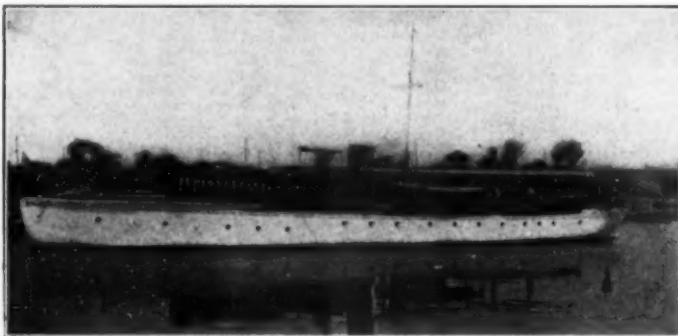
Telephone
1375 Broad

15 William Street
New York City

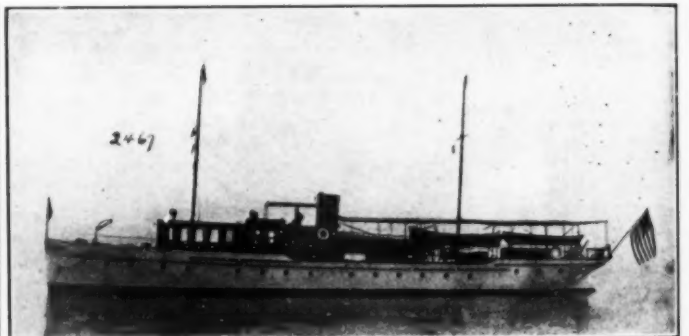
We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER
A few are shown on this page. Plans, photographs and full particulars mailed on request



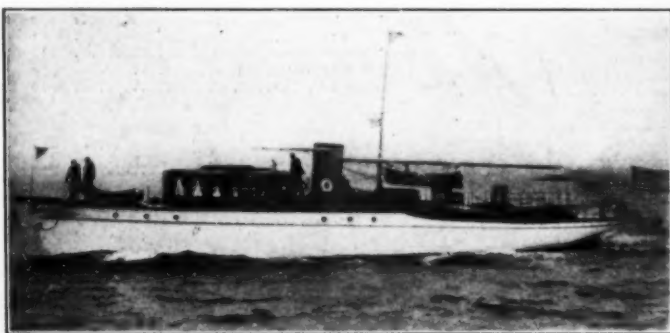
No. 1662.—For Sale or Charter.—Modern twin-screw power houseboat; 90 x 17 x 3.5 ft. Built 1911. Speed 10-12 miles. Four staterooms, large saloon, two bathrooms, electric lights, etc. Price attractive. Cox & Stevens, 15 William St., New York.



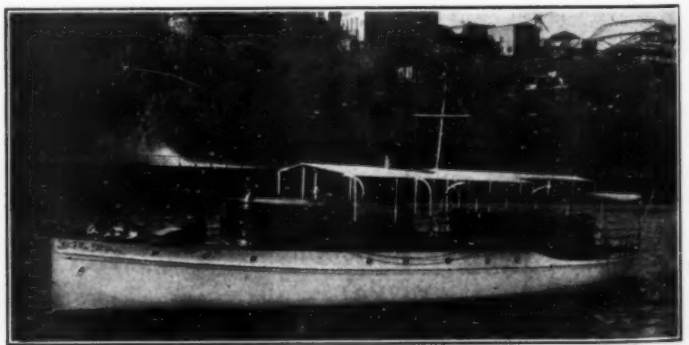
No. 885.—For Sale or Charter.—Exceptionally handsome, fast, steel, twin-screw cruising power yacht; 118 x 16.6 x 5 ft. Built 1910, from our design. Speed up to 18 miles; two 300 h.p. Craig motors, three double staterooms, main and dining saloons, two bathrooms, electric lights, etc.; handsomely finished and furnished. Probably the most desirable proposition ever offered in a large gasoline yacht. Apply to Cox & Stevens, 15 William St., New York.



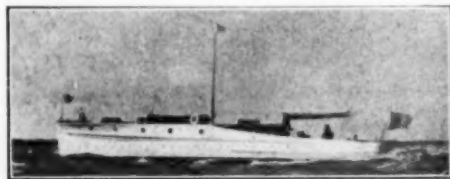
No. 2467.—Now in commission in Florida waters. Modern, twin-screw cruising power yacht; 98 x 16 x 4 ft. Built 1911 from our designs. Speed 14-16 miles; two 100-125 h.p. 6-cyl. air-starting Standards. Large accommodation includes five staterooms and two bathrooms aft; dining saloon and galley forward. Price attractive. Cox & Stevens, 15 William St., New York City.



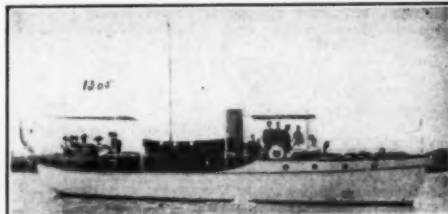
No. 2028.—For Sale.—Attractive twin-screw cruising power yacht; 90 x 15 x 4 ft. Speed 13-15 miles; two 6-cylinder Sterling motors. Dining saloon and galley forward; three double staterooms and bath aft. Price attractive. Cox & Stevens, 15 William Street, New York.



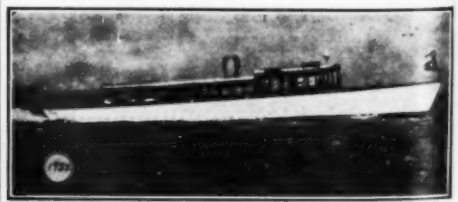
No. 2134.—Excellent Bargain.—Up-to-date gasoline cruiser; 71 x 12.3 x 3.5 ft. Built 1912. Speed, 13 miles; two 20th Century motors. Dining saloon and galley forward; two staterooms, bathroom, etc., aft. Cox & Stevens, 15 William Street, New York.



No. 1687.—Offer Wanted.—Raised deck cruiser; 60 x 12.3 x 3.6 ft. Built 1911. Speed 12-13 miles; 60 h.p. 6-cylinder Lamb. Large saloon, two staterooms, etc. Exceptional opportunity for quick purchase. Cox & Stevens, 15 William Street, New York.



No. 1305.—For Sale.—Raised deck cruiser; 50 x 10.6 x 3.6 draft. Built by Britt Bros., 1910. 25-35 Standard; speed, 11 miles. Double stateroom, saloon, etc. Electric lights. Interior finish African mahogany. In good condition. Price attractive. Cox & Stevens, 15 William St., N. Y.



No. 1932.—Exceptional Bargain.—Attractive, high speed day cruiser; 50 x 8 ft. Speed, 20 miles; 125 h.p. 6-cyl. Craig motor. In first-class condition. Cox & Stevens, 15 William Street, New York.

TELEPHONES { 3479 }
 { 3171 } CORTLANDT

BRITISH CORRESPONDENT

STANLEY M. SEAMAN

YACHT BROKER

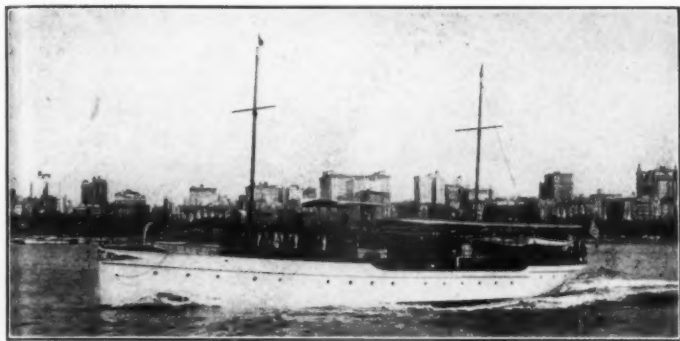
220 BROADWAY, N. Y.

(ESTABLISHED 1900)

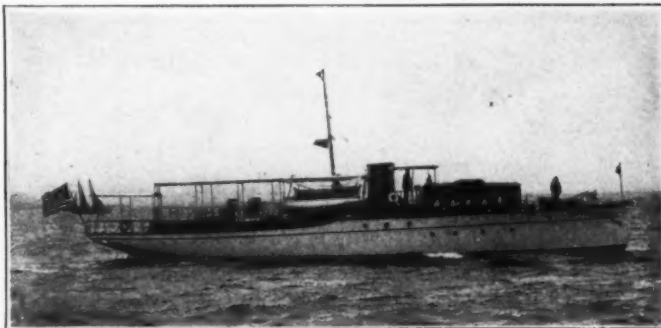
CABLE, "HUNTSEA," N. Y.

MARINE INSURANCE

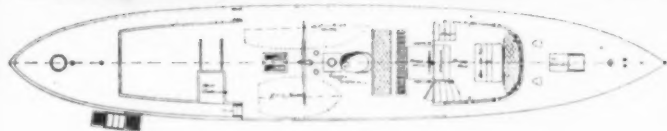
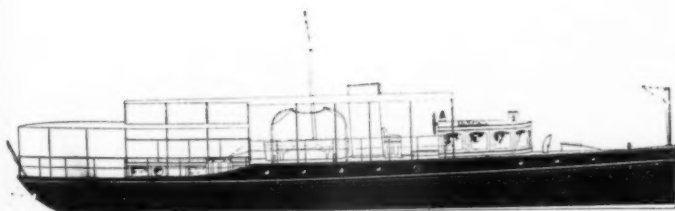
Handsome 1914 Catalog showing over 200 Pictures of the 2,000 or more Yachts For Sale and Charter, Sent on Request.



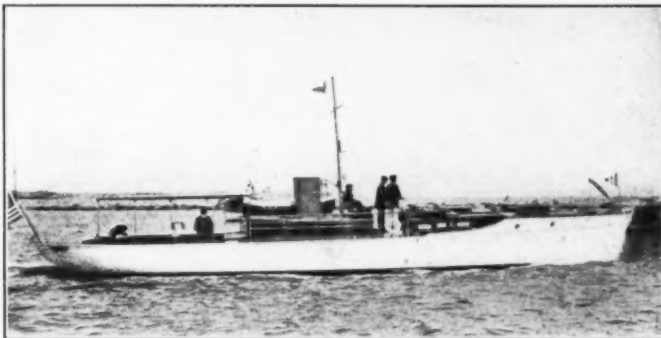
7094.—98 Ft. Twin Screw Sea Cruiser. 4 staterooms; 2 baths. Berths 10. Two 100 Standards; speed 12 knots. All modern conveniences. Stanley M. Seaman, 220 Broadway, New York.



7544.—90 Ft. Twin Screw Sea Cruiser, launched 1912. 3 double staterooms; berths 8; bathroom. Two 60-90 Sterlings; speed 12 knots. Exceptionally able. Stanley M. Seaman, 220 Broadway, New York.



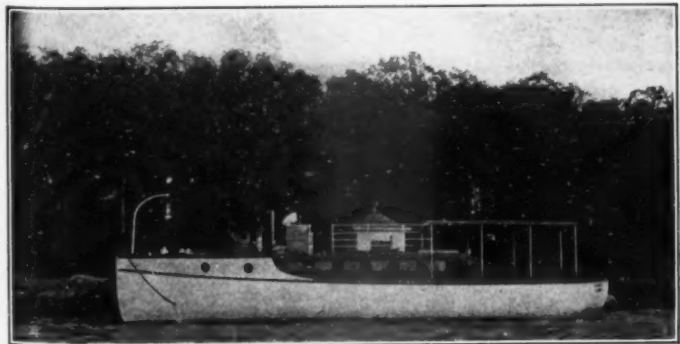
7555.—71 Ft. Twin Screw Coast Cruiser, launched 1912. Two double staterooms; bath. Two 45 h.p. 20th Century engines; speed 13 miles. Cost \$18,000. Sacrificed. Stanley M. Seaman, 220 Broadway, New York.



7587.—62 Ft. ELCO Cruiser. Double Stateroom. Saloon. 2 toilets. 60-90 Sterling, new 1913. Speed 12-14 knots. Elegant condition. Stanley M. Seaman, 220 Broadway, New York.



7589.—42 Ft. Able Cruiser. Berths 4. 25 Standard; speed 10 miles. Stanley M. Seaman, 220 Broadway, New York.



7403.—42 Ft. Coast Cruiser. Stateroom; saloon; 30 h.p. Lamb; speed 10 1/4 miles. Steers and controls from both bridge and cockpit. Stanley M. Seaman, 220 Broadway, New York.



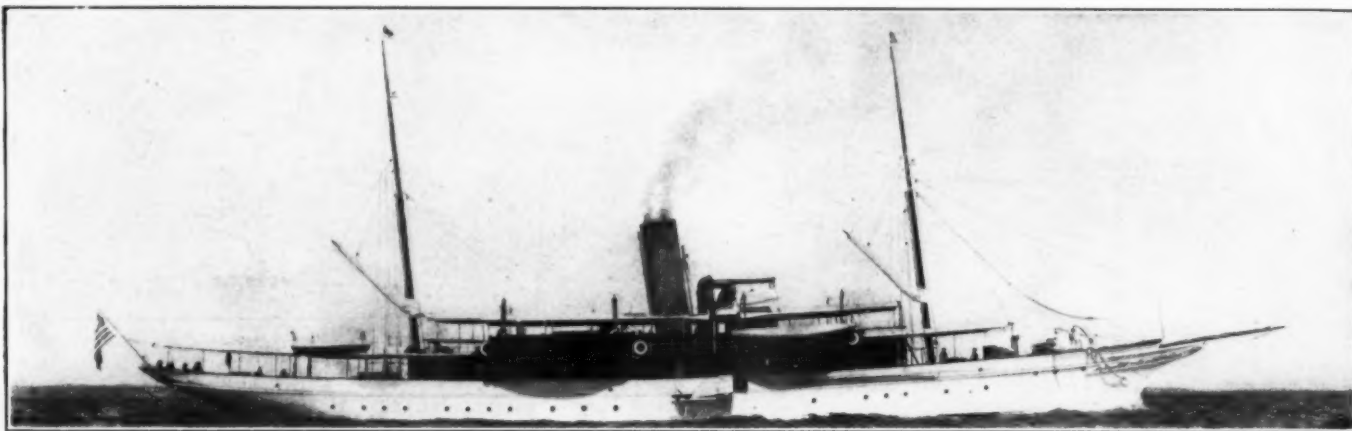
6749.—40 Ft. Cruiser; berths 5; 30-45 Sterling; new 1912; speed 11 1/4 miles; complete cruising inventory; about \$3,500 spent on boat since 1911 in permanent improvements; whole outfit in perfect condition—good as new; enjoys excellent racing record. Low price. Stanley M. Seaman, 220 Broadway, New York.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

WILLIAM GARDNER

FREDERICK M. HOYT

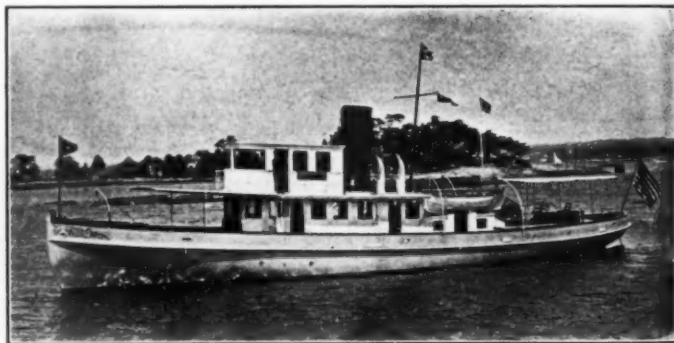
PHILIP LEVENTHAL

WILLIAM GARDNER & CO.**NAVAL ARCHITECTS, MARINE ENGINEERS AND YACHT BROKERS**Telephone Call
3585 Rector**1 BROADWAY, NEW YORK**Cable Address
Yachting, N. Y.**WE HAVE A COMPLETE LIST OF YACHTS OF EVERY DESCRIPTION FOR SALE AND CHARTER. PLANS, PHOTOS AND FULL PARTICULARS FURNISHED ON REQUEST.**

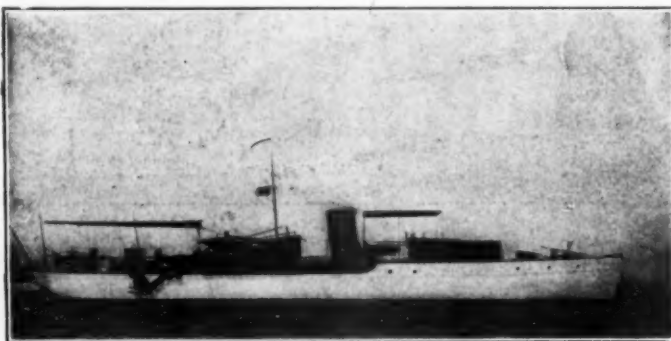
No. 616.—Sale and Charter.—Ocean Going Steam Yacht, English build; 195 ft. overall; Scotch boiler; speed 12 knots; A-1 condition throughout; accommodation for twelve people.



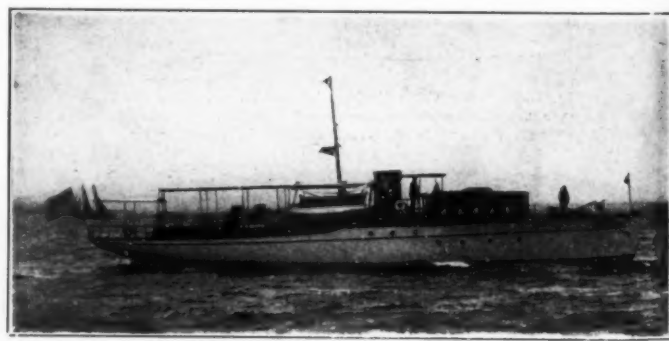
No. 1944.—Handsone, commodious, 83 ft. gasolene yacht, recent build; two 75 h.p. motors; speed 15 miles.



No. 520.—Steam Vessel, 90 ft.; triple expansion engine; Almy boiler. Adapted for pleasure, towing, inspection and commercial purposes.



No. 1850.—Coast Cruiser; twin screw; Lawley built; 76 x 12.6 x 4; launched 1912; two 60 h.p. motors; speed 13 knots. Dining saloon, two staterooms, bath, etc.



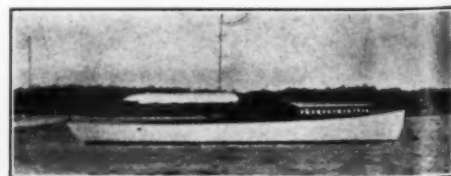
No. 1842.—Twin Screw Cruiser, 90 x 15; launched 1912; two Sterling motors; excellent interior arrangement and very able seaboat.



No. 1256.—Bridge deck cruiser, 45 x 9.6; Standard motor, 18 h.p. first-class condition.



No. 1363.—Motor cruiser, 43 x 8; six-cylinder engine; complete equipment; A-1 condition. In Southern waters.



No. 1957.—Trunk cabin launch, Herreshoff build; Standard 40 h.p. motor; reasonable figure.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

TAMS, LEMOINE & CRANE

NAVAL ARCHITECTS

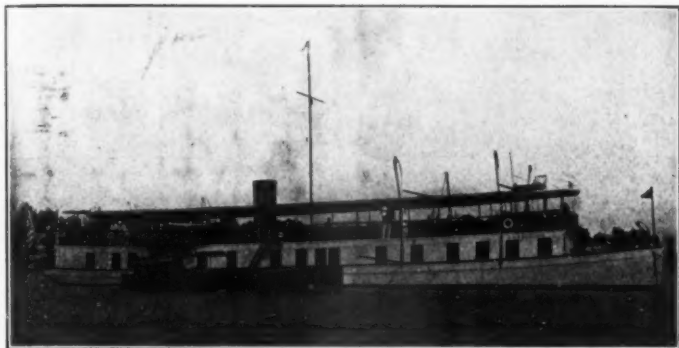
AND

YACHT BROKERS

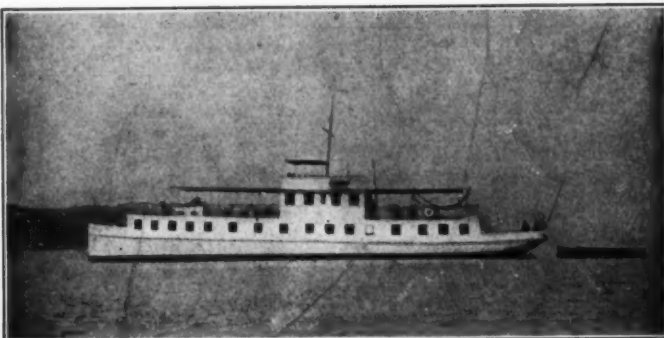
Telephone
4510 John

52 Pine Street
New York City

Offer for charter or sale the following yachts; all are ideally suited for use in Florida. We have specialized in Southern and Florida charters, having most complete lists of suitable boats available



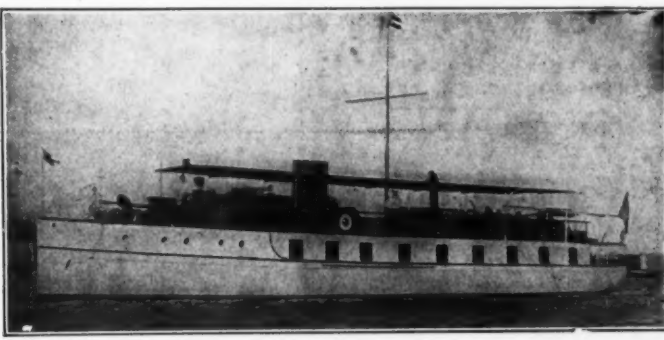
No. 1868.—For Charter for Chesapeake and Florida.—Twin-screw modern houseboat. Electric ice machine and light. Heating plant. Two 75 h. p. Standard motors. 123 ft. x 17 ft. 10 in. x 3 ft.



No. 1864.—110 ft. seagoing house yacht; speed 12 miles an hour; exceptional accommodations. Sale or charter.



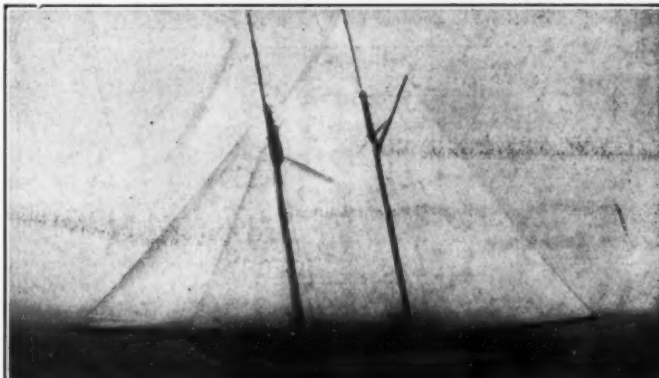
No. 1865.—For Sale or Charter—now in commission Florida waters.—Twin Screw Houseboat; 125 ft. x 23 ft. 4 in. x 3 ft. 6 in. draught; has 8 staterooms, each having brass beds; main saloon, dining saloon, observatory, 4 bathrooms, 5 water closets, maid's and valet's rooms, etc.



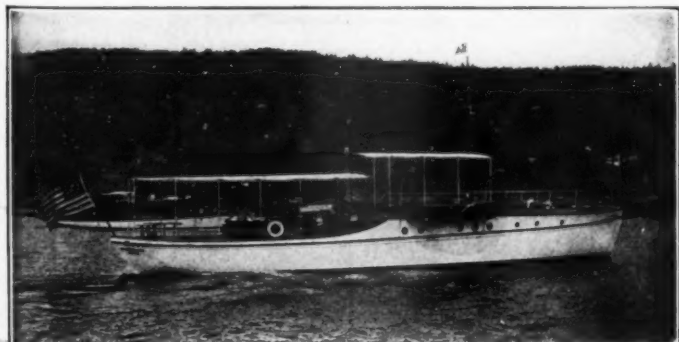
No. 1865.—Combination cruiser and houseboat, 90 ft. x 17 ft. x 3 ft. 4 in.; twin-screw; very able and finely appointed.



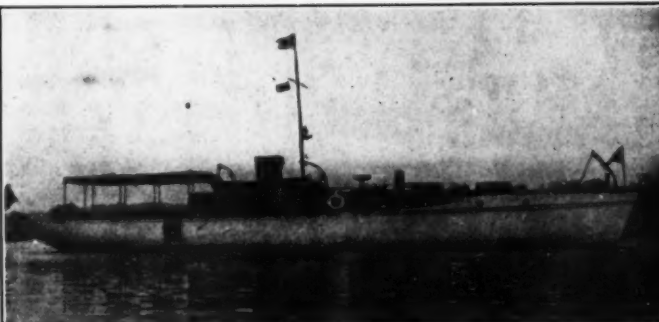
No. 8452.—Sale or Charter.—Twin-screw, 90 x 15 x 4 ft.; 12 knots; two 6-cylinder Sterling motors; excellent accommodations; large deck space.



No. 1045.—For Sale.—Attractive auxiliary schooner. 97 ft. x 70 ft. x 19 ft. 6 in. x 8 ft. 6 in. draught. Designed by us and built by Lawley. 75 h.p. motor, speed 7 miles. 3 large rooms, 2 baths, good size saloon, etc. Excellent condition throughout.



No. 7482.—For Sale.—65-ft. modern cruiser. Twin screw. Good quarters, including bath; ideal for Southern and Northern cruising; price attractive.



No. 7893.—For Sale.—Price attractive or will take smaller high speed cruiser part payment—65 x 10.2. Built Electric Launch Co., 1910; new 90 h.p. Sterling motor, 1913; speed, 15 knots; double stateroom, saloon, large cockpit, complete electric light plant.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

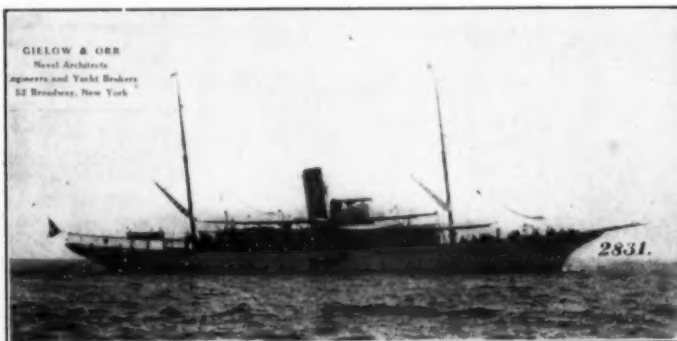
NAVAL ARCHITECTS
ENGINEERS
BROKERS
MARINE INSURANCE

GIELOW & ORR

52 Broadway, New York

Telephones: { 4673 } Broad
 { 4674 }
Cable Address:
Crogie, New York
A. B. C. Code

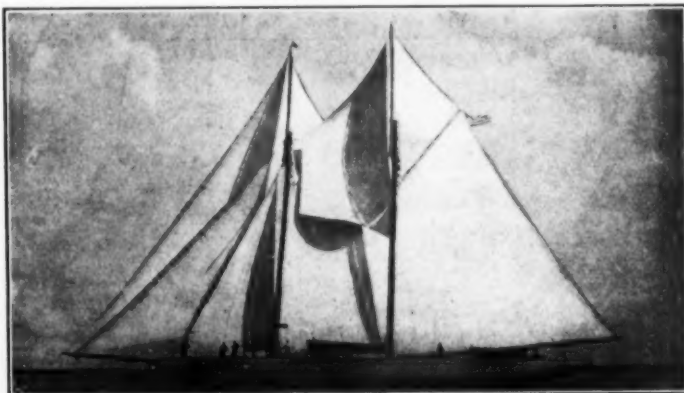
Unusually large selection of American and European yachts of all types for sale, charter and exchange. Upon receipt of inquiry, with outline of your requirements, we will promptly submit photographs and full information. Our experience as architects and engineers lends an added value to our brokerage service, in expert appraisal and advice.



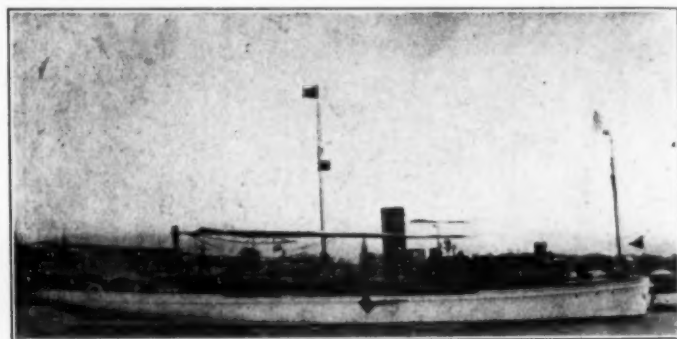
No. 2831.—Sale, Charter—195 ft. seagoing steel steam yacht. Eight staterooms, five bathrooms. Very roomy and comfortable. Ideal offshore cruiser.



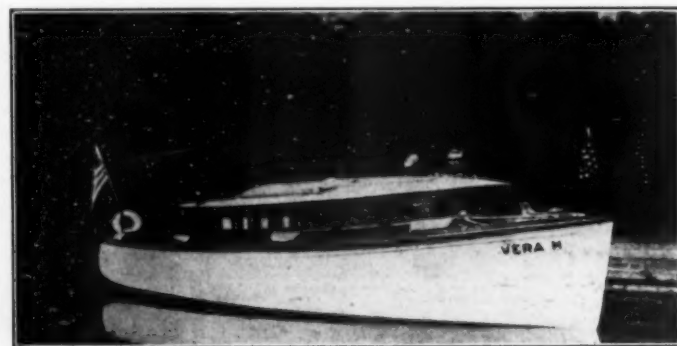
No. 565.—Sale, Charter—145 ft. single screw steel steam yacht. Speed up to 15 knots. Five staterooms, two bathrooms. Fine condition throughout. Well found.



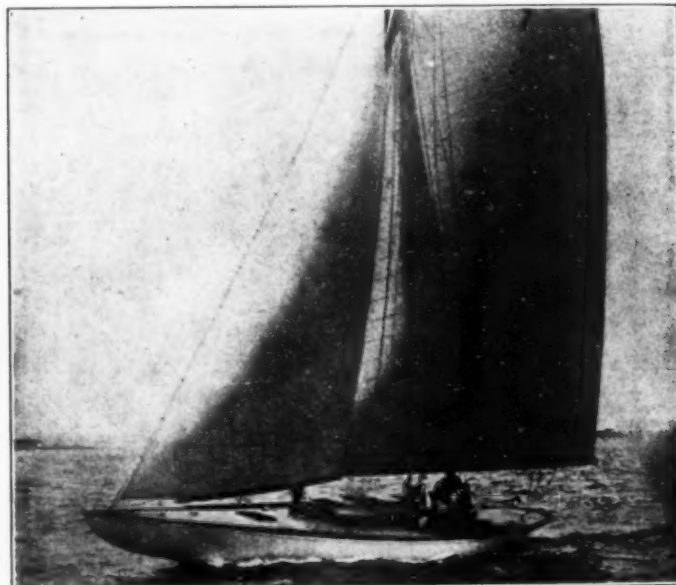
No. 1035.—Sale—Auxiliary schooner; Cary Smith design; steel construction; 110 x 28 x 21.6 x 12 ft. draught. Sleeps ten in owner's party. 75 H. P. Standard motor. Will be sold reasonable price as owner has large steam yacht.



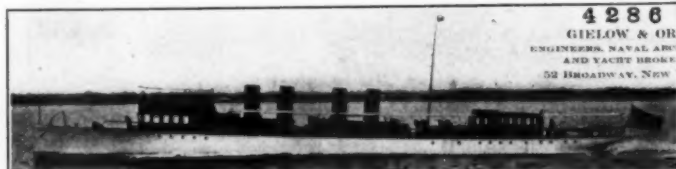
No. 3659.—Sale or Charter—100 ft. twin screw motor yacht; speed up to 18 miles. Excellent accommodations. Must be seen to be appreciated.



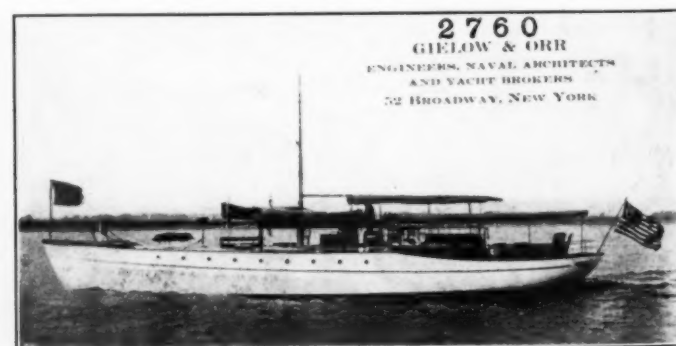
No. 4201.—Sale—Hunting cabin cruiser. 35 ft. x 8 ft. 6 in. x 3 ft. draught. Unusually well built; roomy and comfortable; completely found. 15 H. P. engine; one man control at steering wheel. Condition A-1.



No. 4453.—Sale—Class "P" sloop. 1913 champion. 35 ft. waterline. Built 1913.



No. 4286.—Sale—Fastest steam yacht in the world. Triple screw; turbine engines. Oil burning water tube boilers. Speed up to 38 miles per hour. Practically new.



No. 2760.—Sale—67 ft. raised deck cruiser. 13 ft. 8 in. beam, 3 ft. 6 in. draught. 6-cylinder 6 x 8 1/2 Holmes motor. Speed 12-14 miles. Fine electric light plant. Completely found.

FRANK BOWNE JONES, Yacht Agent

29 Broadway, New York

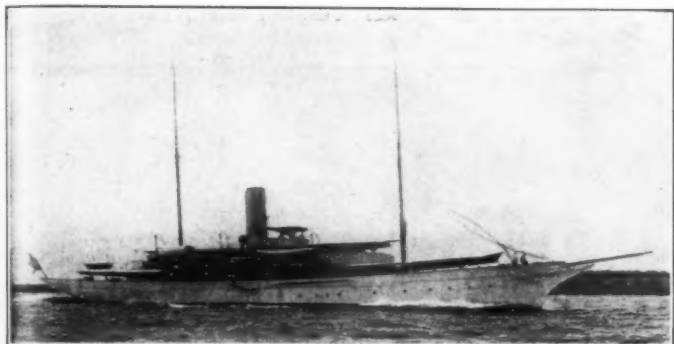
Telephone, Rector 3890

High-Class Yachts of all types for sale and charter

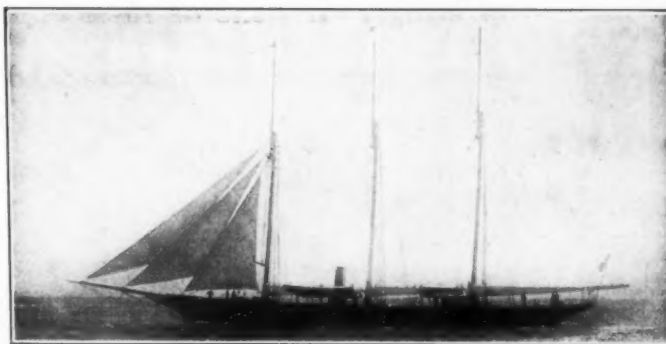
NAVAL ARCHITECTURE

MARINE INSURANCE

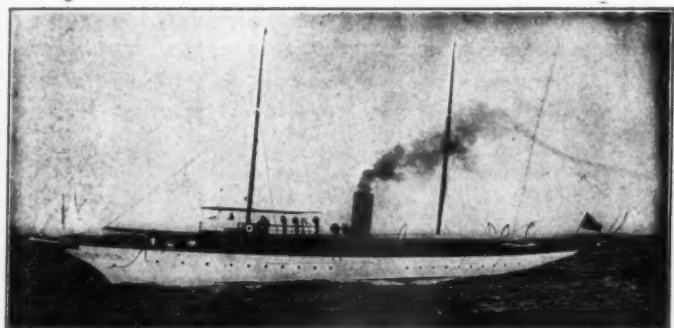
Let Me Know Your Requirements



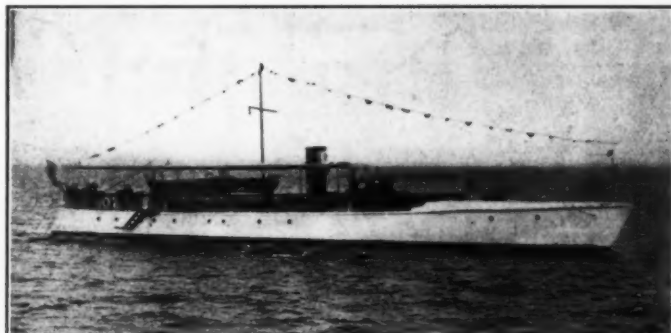
No. 3852.—200 ft. sea-going steam yacht; a splendid vessel at a reasonable price; for sale or charter.



No. 2558.—Sea-going auxiliary; length 165 ft. One of the best yachts of this type.



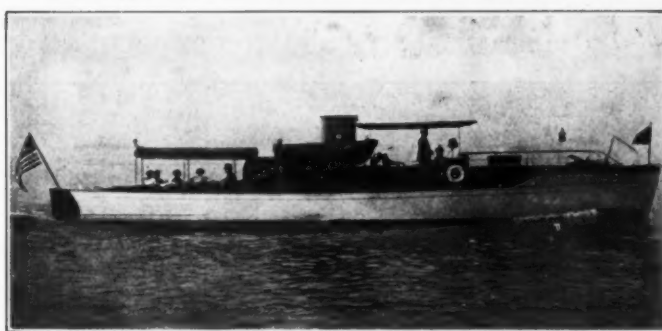
No. 5431.—170 ft. steel steam yacht; good speed; economical; attractive price.



No. 3945.—95 ft. steel gasoline yacht of the express type; speed 23 miles per hour.



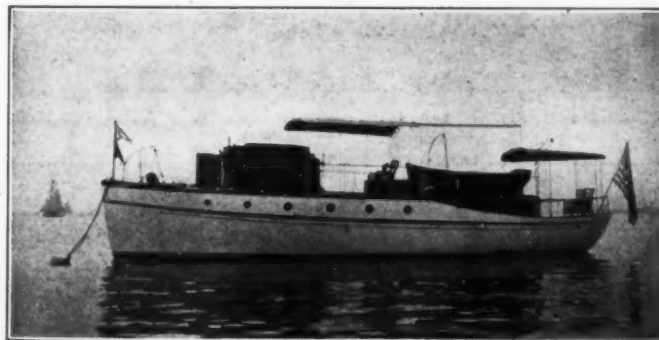
No. 3284.—60 ft. power houseboat; strong and seaworthy; well arranged.



No. 6568.—60 ft. twin-screw gasoline cruiser; speed 20 miles.



No. 6564.—45 ft. Seabury day boat; good as new; speed 13 miles.



No. 6409.—45 ft. gasoline cruiser; built last year; high-class boat.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

HENRY H. JENNINGS, 20 years } with the late MANNING'S YACHT AGENCY
HERMAN JAGLE, 14 years }

Jennings Yacht Brokerage Company

AMERICAN AND FOREIGN YACHTS

Merchant Vessels for Sale and Charter

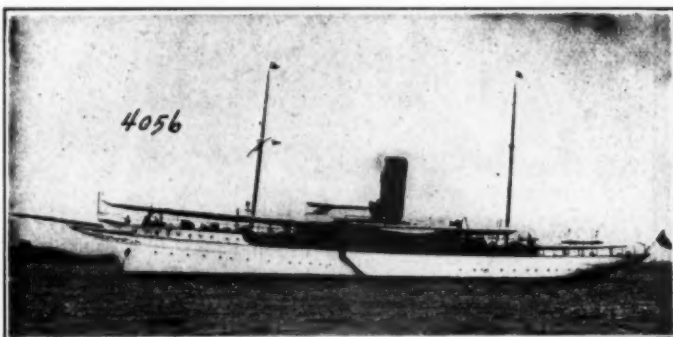
HAMBURG-AMERICAN BUILDING

45 Broadway, New York City

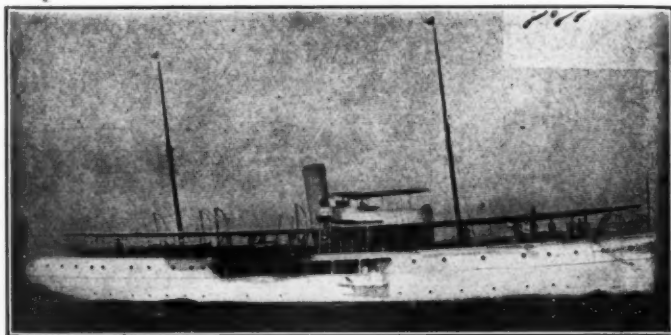
Telephone
Rector 8545
Cable Address,
Yachthroco, New York

Surveying
Marine Insurance

Our list comprises all the available yachts for sale and charter. Below are a few of our offerings. If none of these appeal to you write us your requirements.



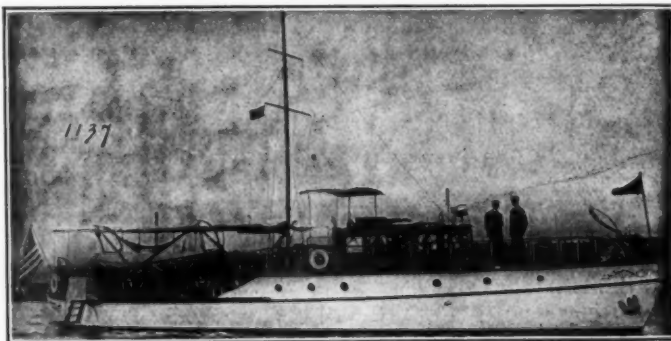
No. 4056.—240-ft. ocean cruiser; one of the handsomest vessels afloat. Splendid accommodation.



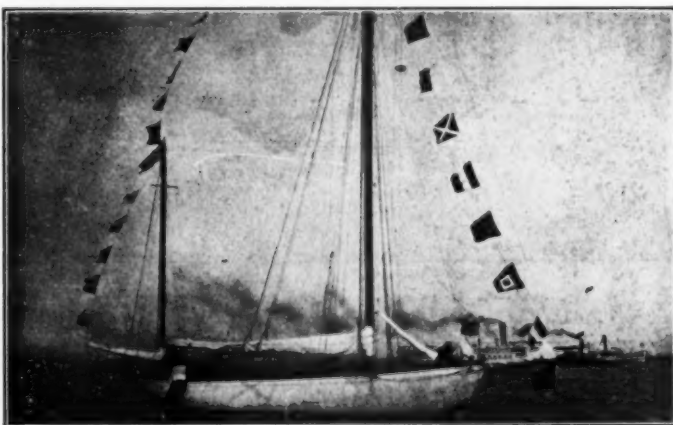
No. 3835.—175-ft. Ocean-going steam yacht. Nine large staterooms; speed 16 miles.



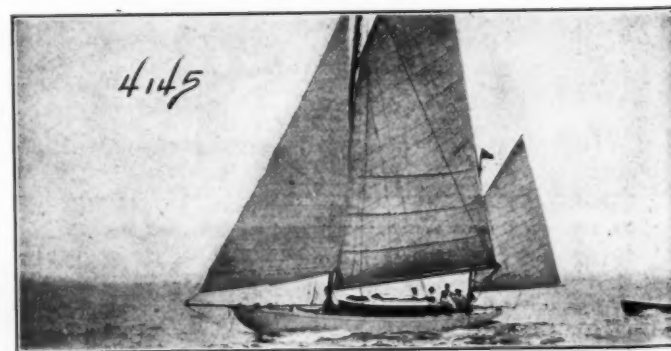
No. 1315.—Twin-screw motor yacht, 90 ft. Large dining saloon; three staterooms, bath. Speed 14 knots.



No. 1137.—62-ft. twin-screw cruiser. Three staterooms, saloon and pilot house; three toilets; electric lights. Speed, 19-12 miles. Suitable for Florida waters. Low price.



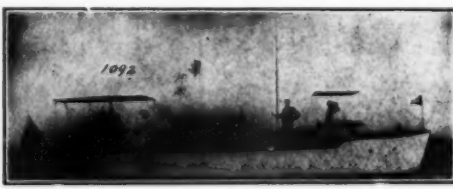
No. 4141.—95-ft. auxiliary keel yawl; three staterooms, large saloon; two baths; Standard motor; electric lights, etc.



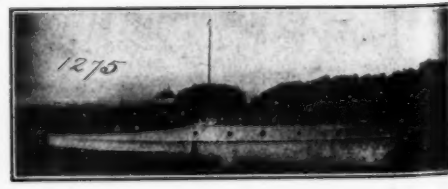
No. 4145.—40-ft. auxiliary yawl; sleeps four. Bargain for quick sale.



No. 1278.—50-ft. cruiser, two staterooms, saloon, Standard motor.



No. 1092.—50-ft. cruiser; stateroom and saloon berth six; Standard motor.



No. 1275.—60-ft. cruiser; two staterooms, saloon, etc.; 60 H. P. motor.

COX & STEVENS

TELEPHONE
1375 BROAD

NAVAL ARCHITECTS
and
YACHT BROKERS

15 William Street
New York City



THE International Races to be held this summer for the "America's" Cup, the near approach of the opening of the Panama Canal, and the removal of duty on foreign yachts, have already caused a great renewal of interest in the buying and chartering of STEAM YACHTS, and as summer approaches, the demand will certainly increase.

Appreciating this fact we have with the greatest possible care, investigated the condition of all STEAM YACHTS, both in the United States and abroad whose owners are willing to sell or charter.

It would obviously be impossible in any adequate manner to advertise a sufficient number of these vessels to give anyone interested an idea of the possibilities in any given size or type. Our records consist of photographs, scale drawings and detailed descriptions of all the available STEAM YACHTS, with careful and accurate information as to their condition, speed, seaworthiness, fuel capacity and consumption, number and salary of crew and in fact all the data required to determine whether they are suited for any specific purpose.

We have for many years acted as disbursing agents for the owners of yachts of all types, and have on record in detail the actual costs of owning and operating them. From these records we can tell you within a close margin the cost of owning and operating, or chartering a yacht of any size or type.

If you will write and tell us what you wish to do we will gladly, without any charge, give you our advice, send you a complete list with detailed information of available STEAM YACHTS, together with any facts as to costs that you may wish.

We have had printed a booklet giving the cost of owning, operating and chartering a number of yachts, of various sizes and types. This we will be glad to send to you with our compliments if it would interest you.

CONSULTING ENGINEER AND
NAVAL ARCHITECT

YACHT AND VESSEL
BROKER

J. MURRAY WATTS

OFFICES: 328 CHESTNUT STREET, PHILADELPHIA

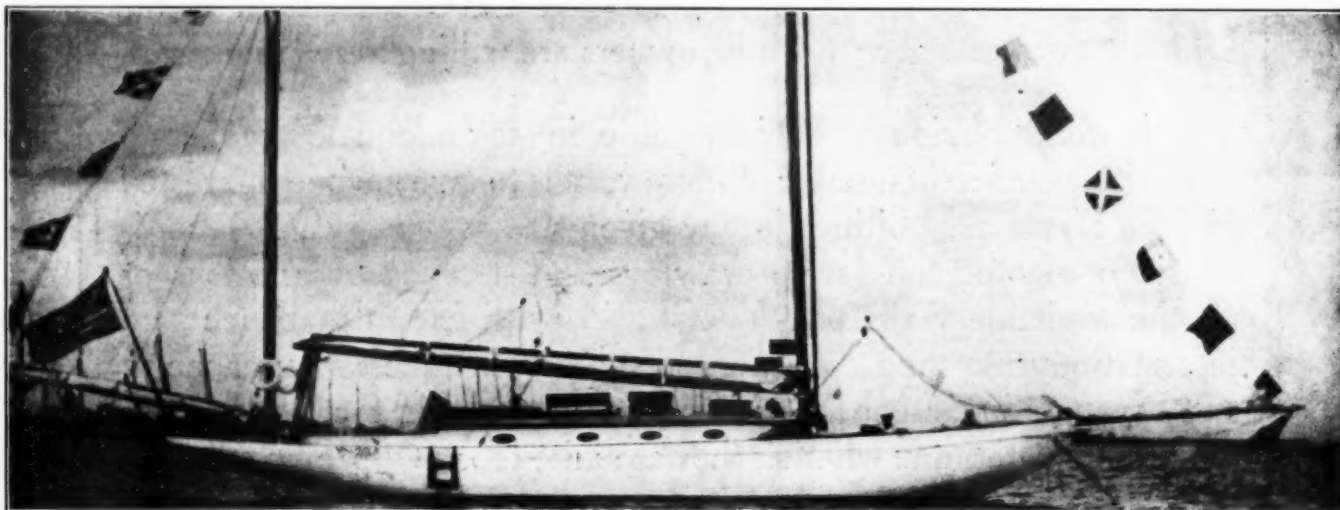
Telephone Lombard 2289

Cable Address: "Murwat"

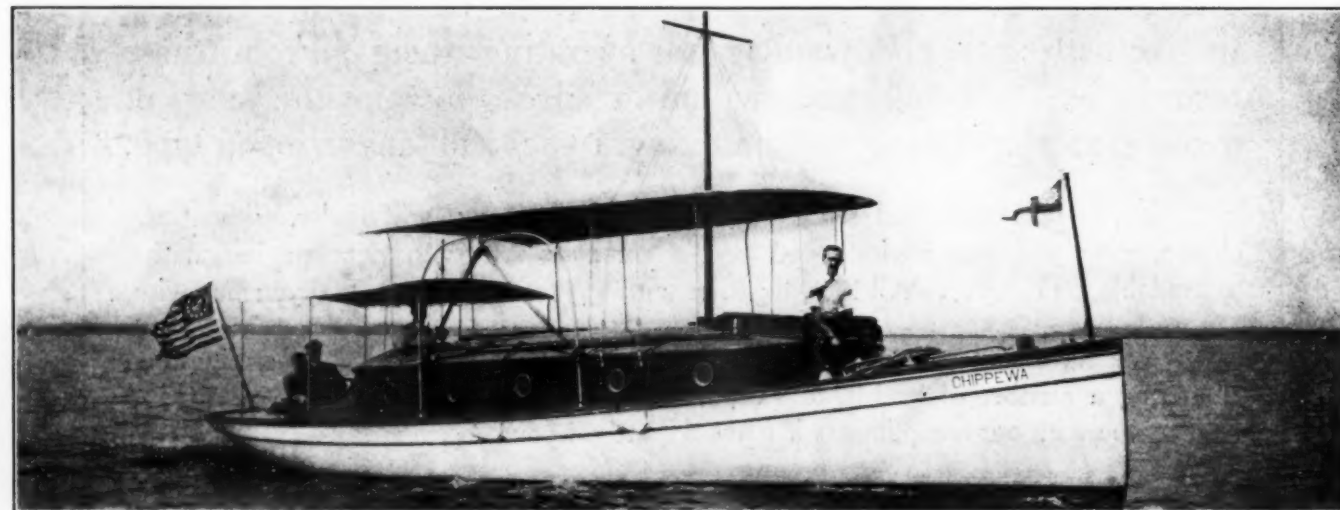
The Brokerage Department offers a complete list of yachts and working vessels. It has on file photographs, plans and descriptions of all the available boats now on the market. Boats known to be unsound will not be handled.



No. 500.—43 ft. x 10 ft. 8 in. x 3 ft. cruiser; stateroom with two berths, engine room, crew's quarters, galley, toilet room, and main cabin with extension transoms. Built last summer; has proved to be a remarkably able sea boat, in all weathers. 24 H. P. Buffalo motor.



No. 501.—30 ft. water-line Lawley built yawl; comfortable accommodations for seven people besides crew's quarters for two. Completely equipped with motor launch, one year old.



No. 502.—35 ft. x 9 ft. x 3 ft. cruiser. Good, able, comfortable boat; main cabin, stateroom, toilet room, galley and engine room. 14 H. P. 4 cylinder Clifton motor. Price \$1500 for quick sale.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

CONSULTING ENGINEER AND
NAVAL ARCHITECT

YACHT AND VESSEL
BROKER

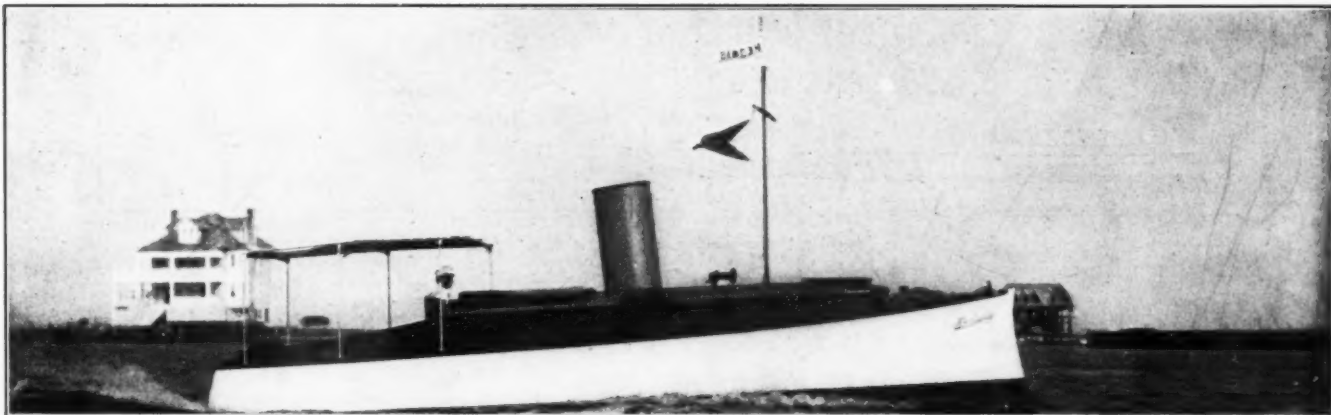
J. MURRAY WATTS

OFFICES: 328 CHESTNUT STREET, PHILADELPHIA

Telephone Lombard 2289

Cable Address: "Murwat"

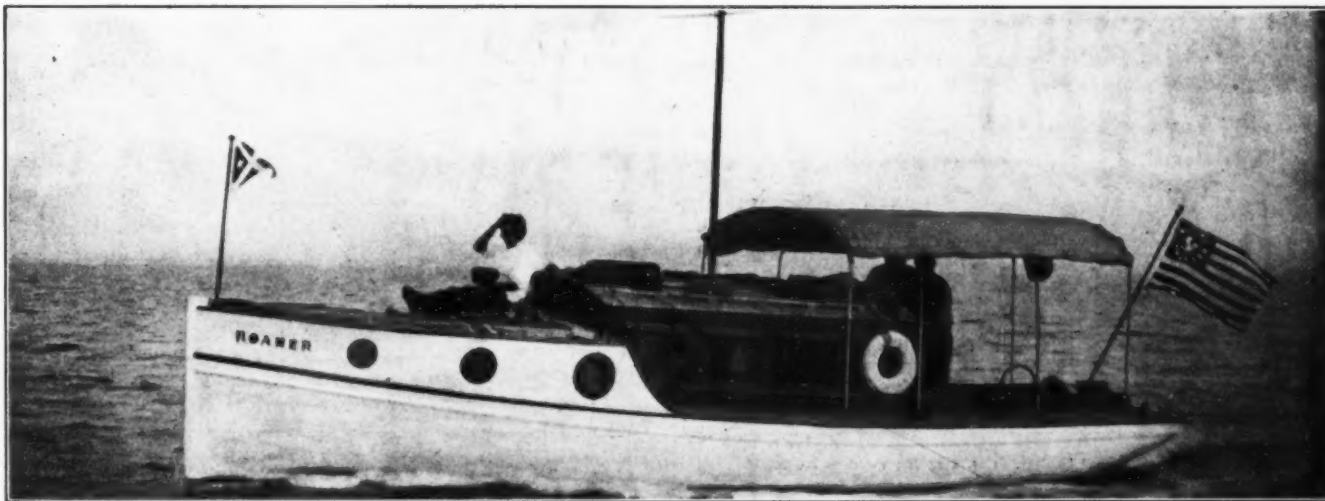
The Brokerage Department offers a complete list of yachts and working vessels. It has on file photographs, plans and descriptions of all the available boats now on the market. Boats known to be unsound will not be handled.



No. 503.—33 ft. x 7 ft. 6 in. x 2 ft. 6 in. day cruiser; very fast; equipped with 30-50 Sterling motor, cabin sleeps two, with toilet, galley, crew's quarters and engine room; finished in mahogany, fully equipped.



No. 504.—34 ft. x 8 ft. 7 in. x 3 ft. 6 in. sea going cruiser, fully equipped for cruising; 15 H. P. Sterling engine; large gasoline, water, and ice capacity; Shipmate stove; main cabin sleeps two; large toilet room, galley, engine room and separate crew's quarters and toilet; carries enough auxiliary sail to handle in a blow; has proved herself a splendid sea boat; built last year; cost complete, \$3,000; will sell for \$1,000 cash.



No. 505.—30 ft. x 8 ft. x 3 ft. cruiser; full headroom in cabin; ideal one-man boat; new 2-cylinder 12 H. P. Standard motor, completely equipped; bargain price.

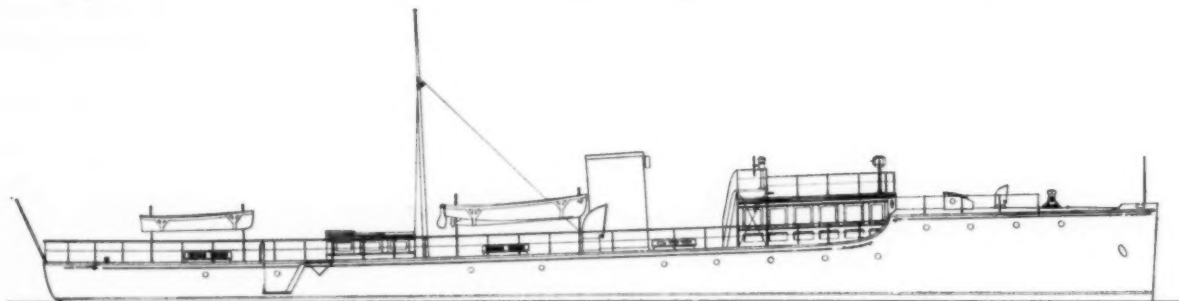
When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

BOWES & MOWER

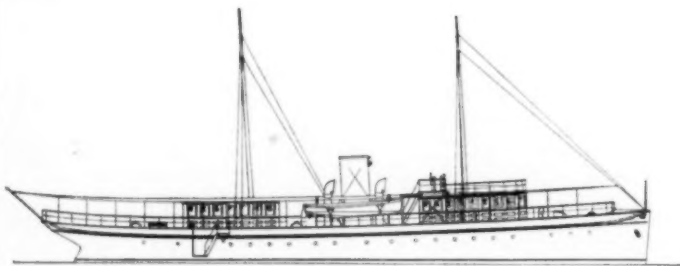
NAVAL ARCHITECTS AND ENGINEERS

Lafayette Bldg., 5th and Chestnut Streets

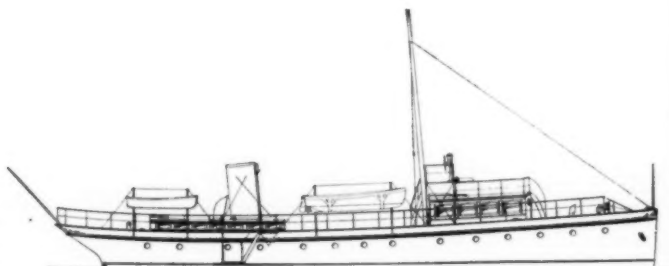
PHILADELPHIA, PENN.



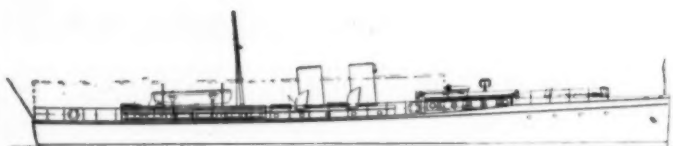
No. 1.—Sea-going Express Cruiser, 125 ft. x 16 ft. 6 in.; speed 18 knots.



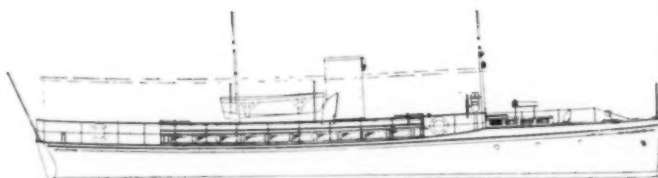
No. 2.—Sea-going Cruiser, 125 ft. x 20 ft.; speed 14 knots.



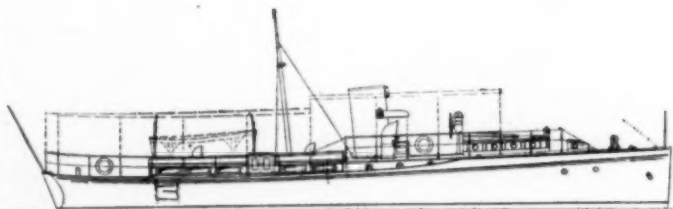
No. 5.—Tramp Cruiser, 84 ft. x 18 ft.; speed 10 knots.



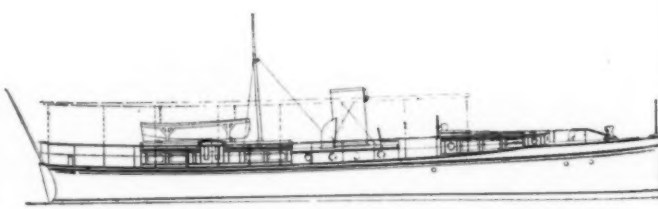
No. 3.—Express Cruiser, 98 ft. x 16 ft.; speed 16 knots.



No. 6.—Southern Cruiser, 60 ft. x 14 ft.; speed 9½ knots.



No. 4.—Off-shore Cruiser, 61 ft. x 13 ft.; speed 10 knots.



No. 7.—Flush Deck Cruiser, 60 ft. x 12 ft.; speed 12 knots.

We Guarantee Speed. At a slight increase over our usual commission we will agree to produce a guaranteed speed or forfeit entire fee for our services.

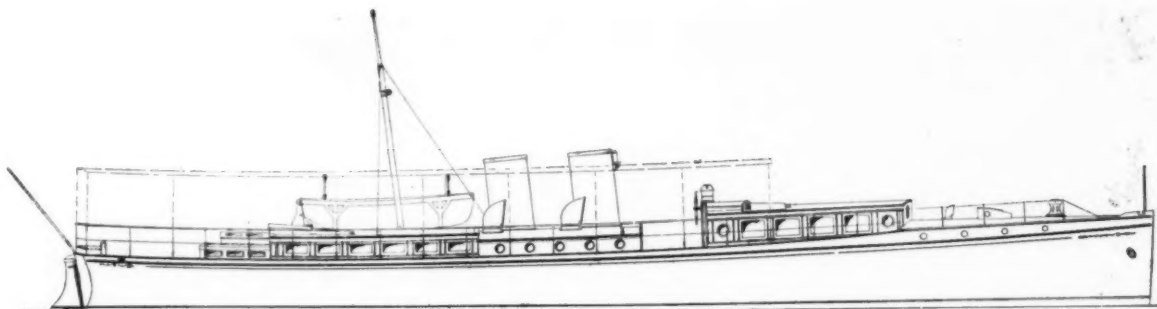
When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

BOWES & MOWER

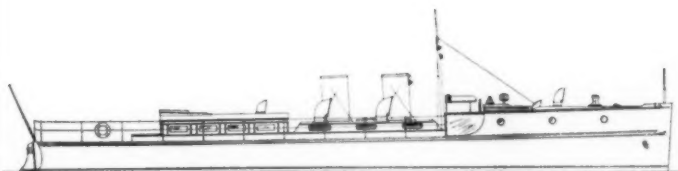
NAVAL ARCHITECTS AND ENGINEERS

Lafayette Bldg., 5th and Chestnut Streets

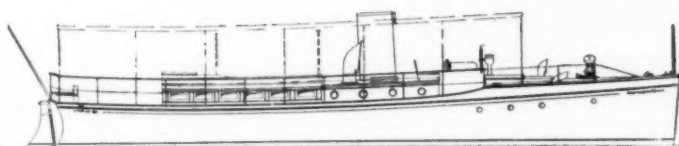
PHILADELPHIA, PENN.



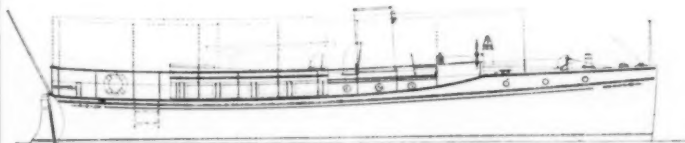
No. 8.—Express Cruiser, 75 ft. x 14 ft.; speed 14 knots.



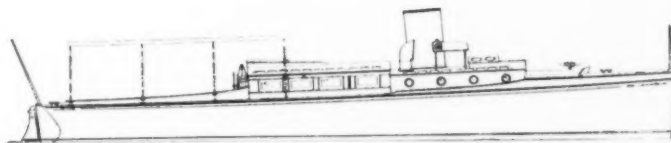
No. 9.—Destroyer Cruiser, 56 ft. x 10 ft.; speed 18 knots.



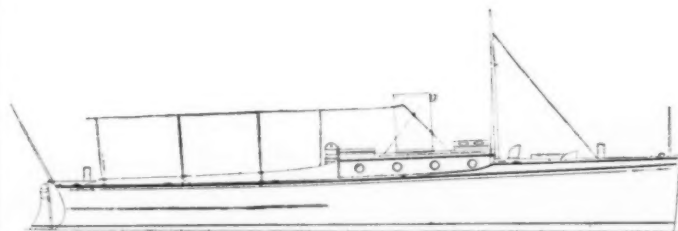
No. 12.—Coast Cruiser, 50 ft. x 11 ft.; speed 10.5 knots.



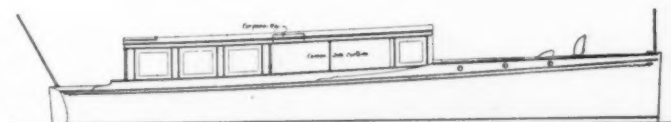
No. 10.—Great Lakes Cruiser, 46 ft. x 11 ft.; speed 9½ knots.



No. 13.—Express Cruiser, 46 ft. x 8 ft. 6 in.; speed 19 knots.



No. 11.—Sea-going Express Boat, 39 ft. x 8 ft.; speed 18 knots.



No. 14.—Day Cruiser, 40 ft. x 7 ft.; speed 17 knots.

Our Off-shore Cruisers are acknowledged to be the best sea boats, and our Ocean Racers have won all important events on Atlantic and Pacific Coasts.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

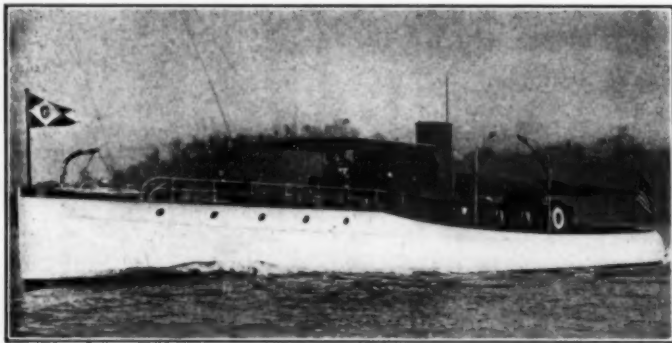
Telephone:—
2800 Tremont

GAS ENGINE & POWER COMPANY — AND — CHARLES L. SEABURY & COMPANY

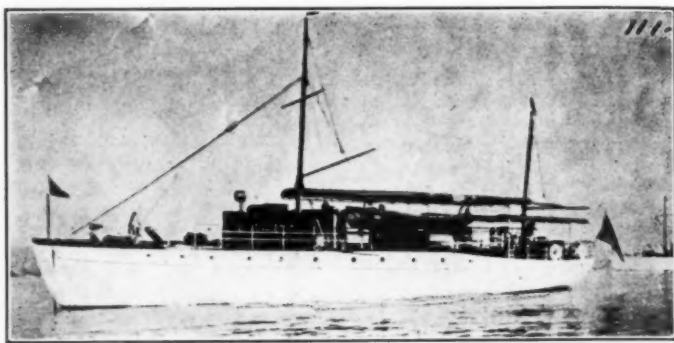
Morris Heights
New York City

We beg to announce that we have several high class propositions in used boats at our works now, and we invite inspection of same.

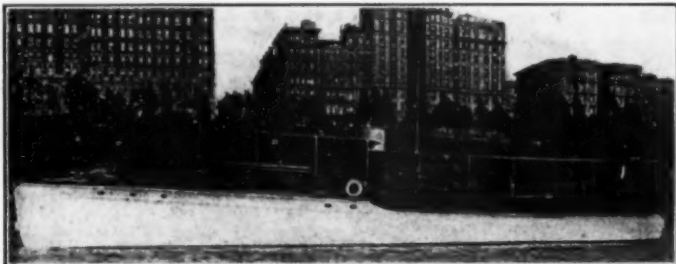
Our works are conveniently located and we take pleasure in showing all interested parties the most complete manufacturing plant of its kind in the world.



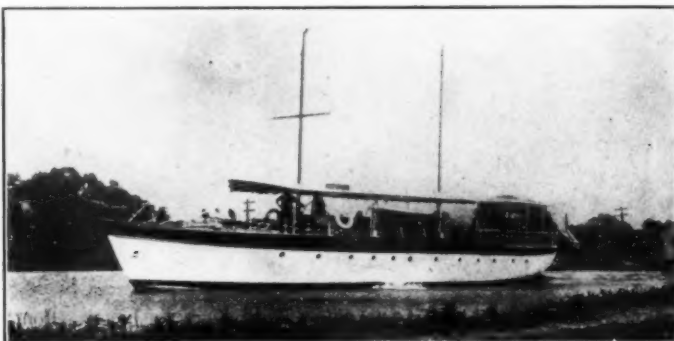
No. 258-M.—High-speed bridge deck cruiser, 77 ft. x 10 ft. x 3 ft. 6 in. Motor—2-6 cylinder, 90-100 H. P. "Speedway," installed new November, 1913. Speed 18 miles. Electric lighting plant. Suitable for ferry service. Best type available.



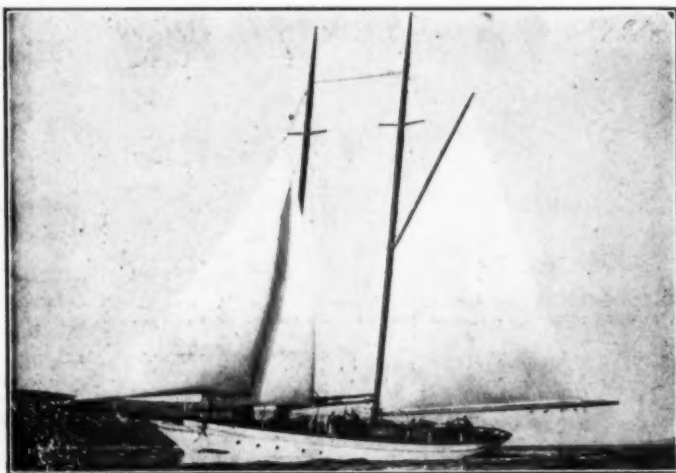
No. 110-M.—Raised deck cruiser, sea-going type. Built 1911. 75 ft. x 14 ft. x 6 ft. Motor—Two 4-cylinder, 8 1/4 x 9 in. Craigs. Accommodations excellent. Fully equipped. Speed 12 miles.



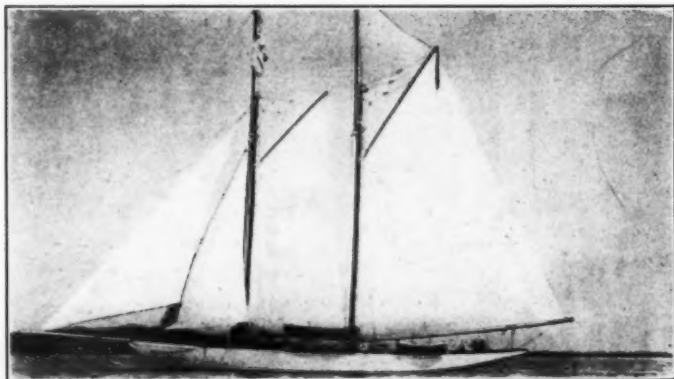
No. 247-M.—Twin-screw motor yacht, 83 ft. x 13 ft. x 3 ft. 6 in. Built 1913. Spacious cruising accommodations. Motor—2-6 cylinder, 75 H. P. each "20th Century." Excellent able cruiser. Price reasonable.



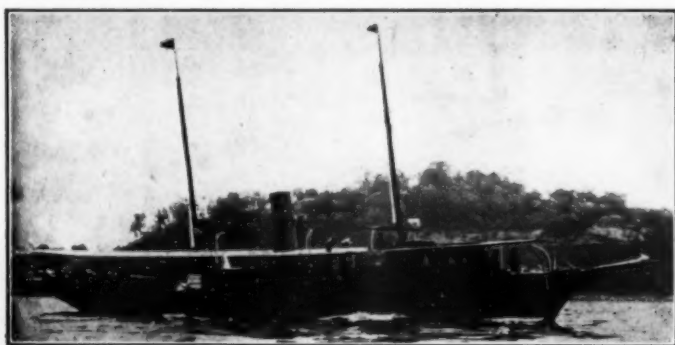
No. 233-M.—Flush deck, able sea-going cruiser. 75 ft. x 15 ft. x 5 ft. Built 1910. 6-cylinder, 75-90 H. P. "Standard" motor. Speed 12 miles. Excellent accommodations; very roomy.



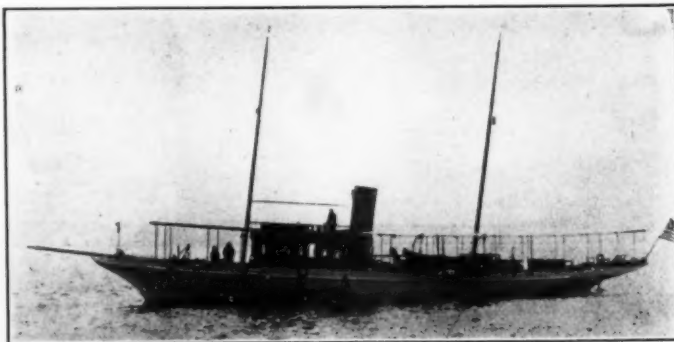
No. 198-M.—Auxiliary schooner yacht, center board type. 90 ft. x 21 ft. x 4 ft. Built 1905. Motor—100 H. P. installed 1912. Speed 10 knots. Best available. Adapted to Southern cruising. Exceptionally fine accommodations. Price reasonable.



No. 160-M.—Auxiliary schooner yacht, 95 ft. x 20 ft. 4 in. x 10 ft. Built 1901. Motor—75 H. P. "Globe." Very fine accommodations. Speed under power 7 knots. Price low.



No. 113-Y.—Steam yacht, 108 ft. x 17 ft. 4 in. x 5 ft. 9 in. Built 1905. "Seabury" steam engine and boiler. Excellent conditions throughout.



No. 120-Y.—Steam yacht, 109 ft. 10 in. x 15 ft. 4 in. x 7 ft. 10 in. Speed 12 miles. Fully equipped. Exceptional bargain.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

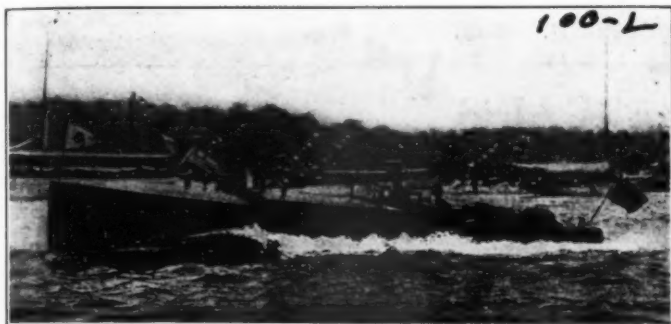
Telephone:—
2800 Tremont

GAS ENGINE & POWER COMPANY — AND — CHARLES L. SEABURY & COMPANY CONSOLIDATED

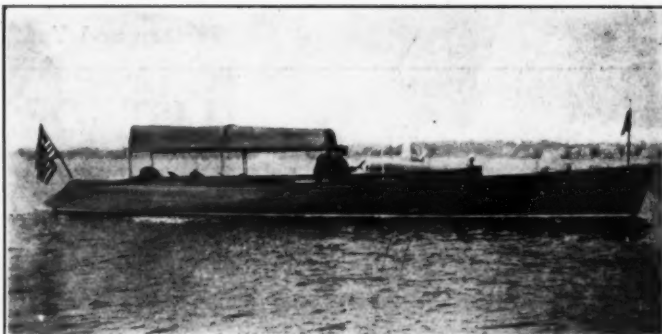
Morris Heights
New York City

Our Brokerage Department have listed all the high-class yachts and launches, now available, for sale or charter.

Write to us and we will be pleased to forward plans, photographs and full particulars. See us at the New York and Chicago Motor Boat Shows.



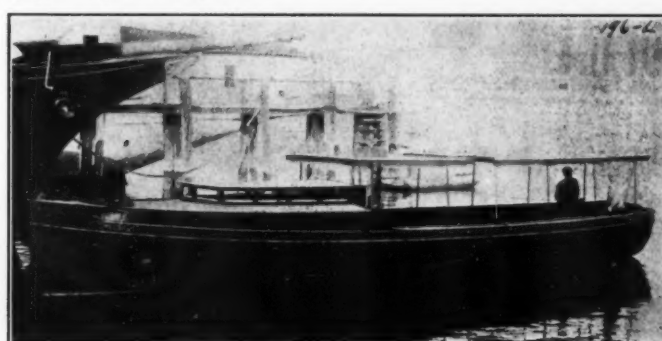
No. 100-L.—High speed runabout, 40 ft. x 6 ft. 3 in. x 2 ft. 6 in. Built 1910. Hull refinished fall 1913. Motor—8-cylinder, 150 H. P. "Sterling," installed 1912. Exceptionally fine outfit. Speed up to 30 miles.



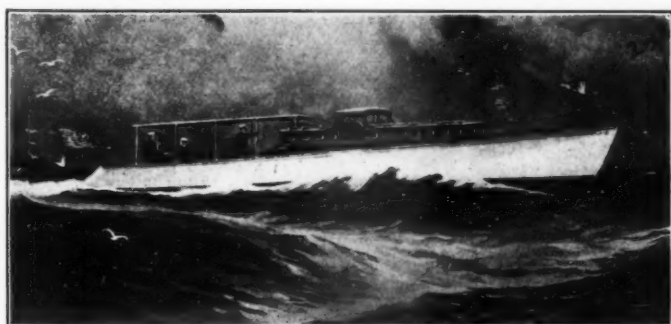
No. 101-L.—Semi-speed sea-going runabout, 45 ft. x 6 ft. 6 in. x 2 ft. 7 in. Built 1910. Motor—6-cylinder, 50-60 H. P. "Speedway" motor. Double ignition. Fully equipped. Speed 18 to 19 miles.



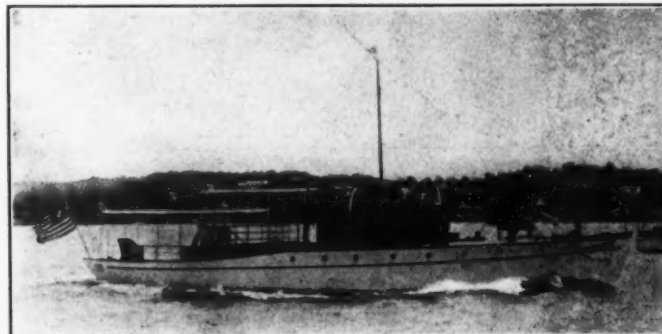
No. 138-L.—Bridge deck cruiser, 36 ft. x 8 ft. 8 in. x 2 ft. 6 in. Built 1912. 20 H. P. "Ralaco," installed spring 1913. Accommodations aft—galley and engine forward. Equipment complete.



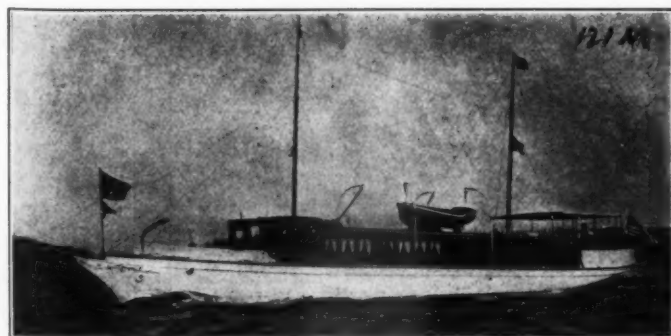
No. 196-L.—45 ft. day boat, standing roof. Fitted with Van Blerck 60-90 H. P. motor, installed in trunk cabin forward. Exceptional bargain.



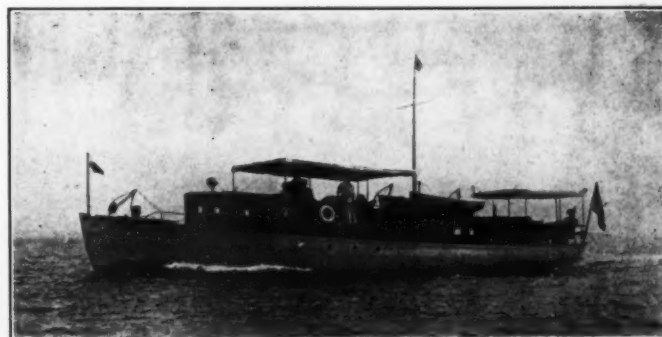
No. 223-M.—Trunk cabin semi-speed day cruiser, 60 ft. x 8 ft. x 3 ft. Built 1908. "Speedway" motor, 90-100 H. P. Used in fresh water short time. Speed 18 miles.



No. 196-M.—Raised deck cruiser, 65 ft. x 13 ft. 8 in. x 4 ft. Accommodations—3 staterooms and 5 berths. "Standard" motor, 50 H. P. Speed 12½ miles. Able sea boat.



No. 121-M.—Trunk cabin cruiser, 76 ft. x 12 ft. 3 in. x 3 ft. 6 in. Built 1905. Accommodations excellent. Two "Speedway" motors, 6-cylinder, 50-60 H. P., installed 1910. Speed 13-14 miles per hour. Condition throughout fine.



No. 145-M.—Twin-screw bridge deck trunk cabin cruiser, 68 ft. x 12 ft. x 3 ft. 6 in. Built 1910. Excellent cruising accommodations. Two 4-cylinder "Speedway" motors, 40 H. P., controlled from steering wheel. The most able and up-to-date cruiser available; condition excellent.

TOPPAN BOAT MFG. CO.

DESIGNERS AND BUILDERS OF

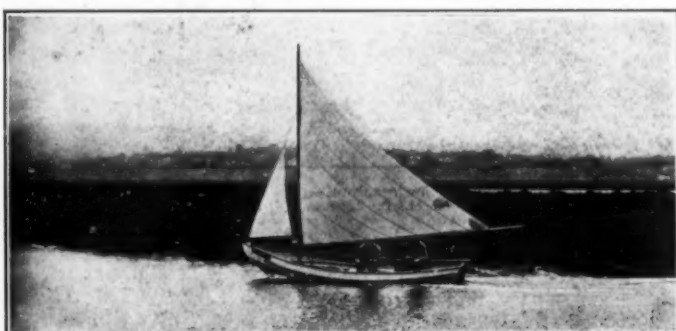
**Dories—Cruisers—Hydroplanes—V-Bottom—Boats
Skiffs—Motors—Fittings**

21 Haverhill Street

BOSTON, MASS., U.S.A.

Factory and Yards, MEDFORD, MASS.

LIST OF BARGAINS



No. 1.—Toppan sailing dory, 16 ft., demonstrating boat with sails and spars, \$80.
Also 18 ft., 5½ beam, \$110, and 14 ft., \$50.

Please mention MOTOR BOATING.



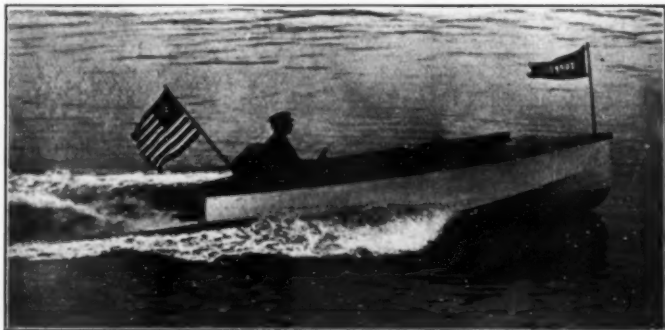
No. 2.—Toppan 19 ft. dory, 5 ft. beam; smooth planked, oak decks; side seats, 3 H. P. reversing motor. Regular \$350, now \$275. New office sample.

Please mention MOTOR BOATING.



No. 3.—Toppan 22 x 5¼ ft. sea-going dory; 6 H. P. reversing motor; oak decks; lockered seats with cushions. Special office sample. Regular price \$550, now \$395.

Please mention MOTOR BOATING.



No. 4.—Famous Toppan hydroplane "Bullet," 14 x 4 ft.; approximate speed 18-40 miles. Mahogany finish. Special price Show Hull \$250. Screw fastened. Can furnish K. D. frames for boat for \$30. Hull without decks \$100.

Please mention MOTOR BOATING.



No. 5.—Raised deck cruiser 30 x 8; 12-14 H. P. T. & M. motor, 2 cyl., with reversing clutch, toilet, galley; good cabin room; 10 ft. cockpit; dory stern. Regular price \$1,500, now \$975. Built for N. Y. Show. New boat.

Please mention MOTOR BOATING.



No. 6.—21 x 5 ft. Toppan V-bottom runabout, Major Casey design; roomy, comfortable; 12 H. P., 4-cylinder Kermath motor with reverse clutch; approximate speed, 15 miles. Special price, \$550. Extra show finish, \$590.

Please mention MOTOR BOATING.

NOTICE

We have the following additional bargains: 12 ft. Racine power tender, 3-horse motor, bright finish, copper fastened, worth \$375, now \$190. Also 18 ft. Racine speedabout, now \$275. Also 21 ft. Truscott launch, \$495, worth \$650. All new office samples.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

RELIANCE MOTOR BOAT CO.

Builders of the Famous Peter Pans

Hydroplanes, Runabouts, Yacht Tenders, Cruisers. Reliance-Continental Motors—Best in the World

207th STREET AND HARLEM RIVER

Telephone 7510 Audubon

NEW YORK CITY

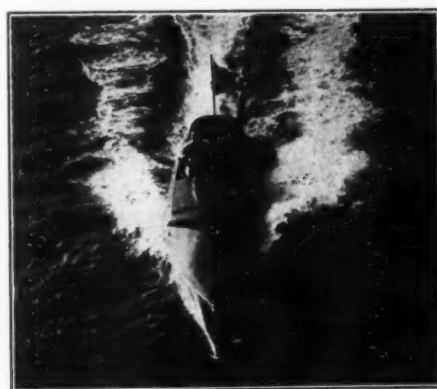
Write us for list of second-hand boats and overhauled motors in prime condition

Tell us what you are looking for



No. 90.—Peter Pan, Sr., day cruiser, 40 x 7-9; magnificent mahogany; new 6 cyl. 60 H. P. motor, self-starter. Every appointment. Splendid sea boat. Equal brand new.

Please mention MOTOR BOATING.



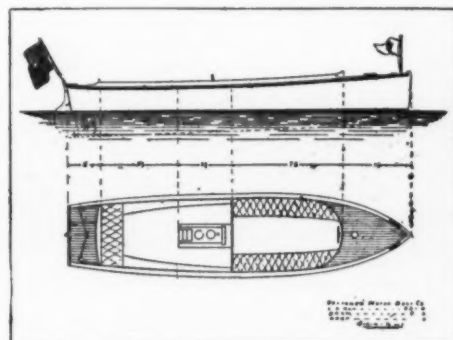
No. 96.—Cinderella type. 26 ft. long, 5 ft. beam; 50 H. P. Continental motor; exquisite finish. Speed 25 miles. Brand new. Bargain.

Please mention MOTOR BOATING.



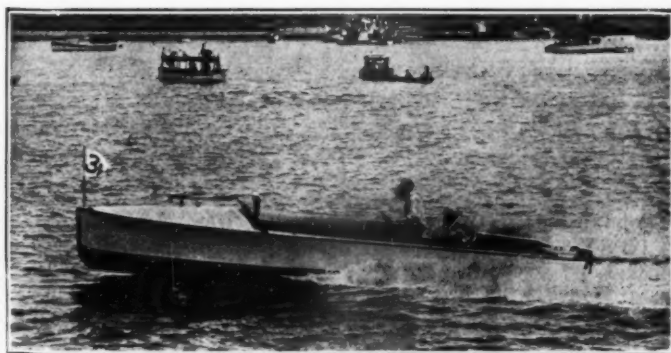
No. 87.—Duplicate "Peter Pan II"—28-footer. All mahogany, sides painted white, rest natural finish; 35 H. P. Mercury motor; rear starter; ran one season. Overhauled. Prime condition. Great bargain.

Please mention MOTOR BOATING.



No. 92.—Reliance family launch; 23 ft. long, 5 ft. 6 in. beam; carries ten in comfort; 2 cyl. Ferro motor, 11 H. P.; speed 12 miles; brand new \$725.

Please mention MOTOR BOATING.



No. 94.—Cinderella. Speed sensation 1913. 26 x 5-2; 4 cyl. Van Blerck motor; 75 H. P. latest Reliance model; 33 miles per hour; carries six perfect comfort; fully equipped; equal brand new. Bargain.

Please mention MOTOR BOATING.



No. 95.—25 x 5; 3 cyl. 15 H. P. Fairbanks motor. Fine running order. Bargain, \$450.00. Thoroughly refinished.

Please mention MOTOR BOATING.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

LUDERS**MARINE***Designers, Builders and Brokers
Stamford, Conn.**Telephone 1981 Stamford**The boats shown below have
been designed and built by us
and are offered solely by us***CONSTRUCTION****COMPANY**

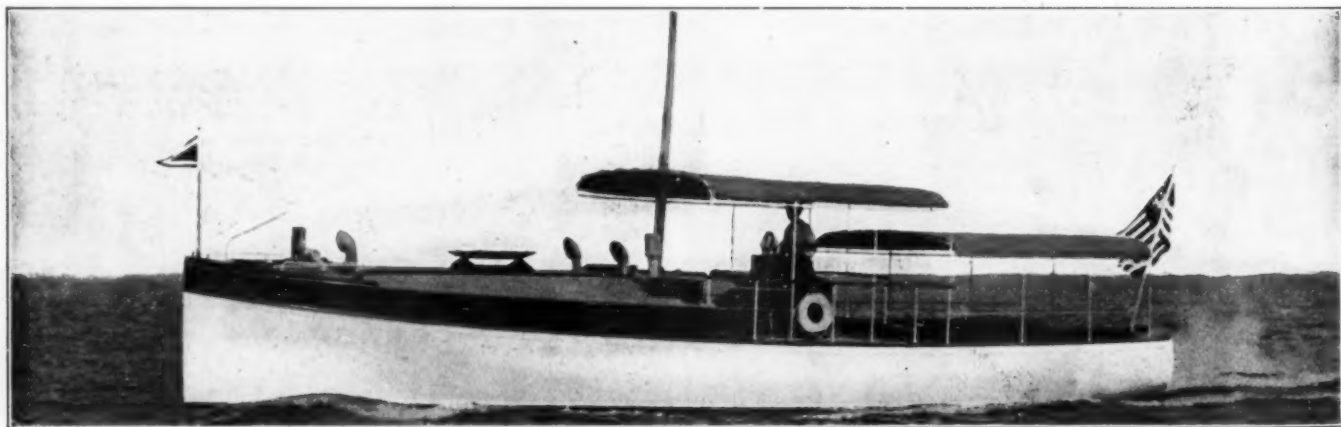
No. 555.—60 ft. x 11 ft. x 4 ft.; unusually fine cruising boat; economically maintained; good speed.



No. 541.—Fast Cruiser; 40 ft. x 9 ft. x 3 ft.; 60 H. P.; won several long distance races; complete equipment.



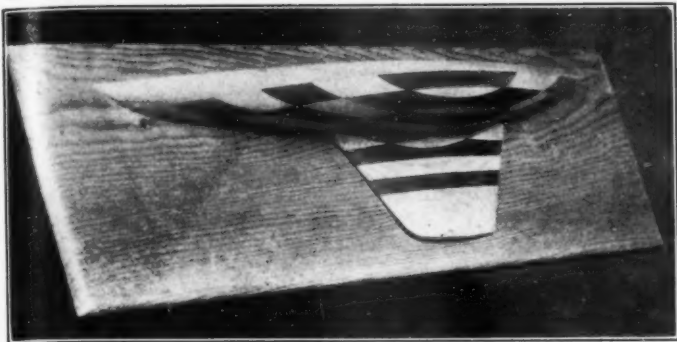
No. 512.—Fast, seaworthy, 30 H. P. Hydroplane.



No. 514.—Fine Cruiser and Day Boat; 46 ft. x 10 ft. 3 in. x 4 ft.; Heavy duty Sterling; 12 miles; bridge deck and roomy cockpit.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

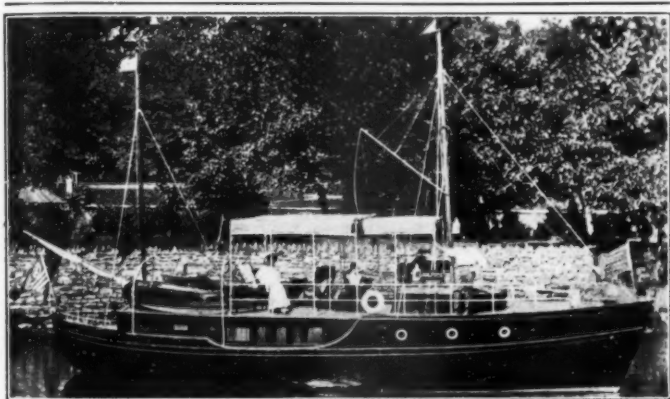
THE MOTOR BOATING MARKET PLACE



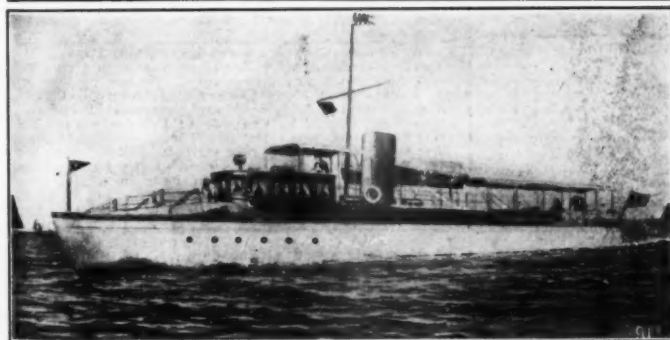
FANCY YACHT MODELS.

We are the originators of these beautiful Art Models, built only to order from the exact lines of your yacht, the alternating woods forward and aft showing the buttock and water-lines and producing a highly artistic effect. Circulars and estimates supplied on request. We also furnish special and stock designs of all kinds, alterations, changes in design, etc. Our large Album of Designs, containing over fifty modern designs, mailed for twenty-five cents.

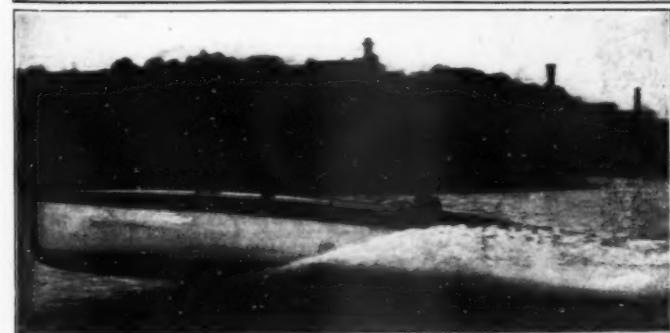
YACHT MODEL EMPORIUM, Syracuse, N. Y.



Yacht "Mulford," 45 x 12, 20-ton register; ask your broker for price and particulars, then see boat and make offer. Must be sold. P. M., c/o MOTOR BOATING.



BARGAIN—Handsome cruising motor yacht, 92 ft. long, 12 ft. beam; twin-screw Sterling motors; speed 14 miles; price \$10,000.00. Inspectable New York. Full particulars and plans, Whittelsey & Whittelsey, 11 Broadway, New York.



For Sale—Magnificent auto runabout, 25 x 5; 40 H. P. Reliance-Continental motor; fully equipped; wicker chairs, horn, lights, anchor, life preservers; upholstered in green pantasote; showed 24.73 on trial; new last spring. Will sacrifice. James K. McGuire, 42 Elm St., New Rochelle, N. Y.

FOR IMMEDIATE SALE—One 6-cylinder, 12 x 14, Single Acting, 300 H. P. Standard engine, recently overhauled, in excellent condition. Shaft, propeller, starting batteries, muffler, exhaust piping, etc. Asking price \$2,500.00. Are open to an offer. Albert E. Eldredge Corporation, 50 Church Street, New York City.

WANTED—One Sextant in good order. S. T. ATKINS, 4860 W. Madison St., Chicago, Ill.

WANTED—a 29-30-31-ft. Wm. Hands V-bottom boat without motor, otherwise complete, or 30 x 5 displacement of wave collecting type—made by Valley Boat Co., a Brockville Gilbert boat or Matthews boat. Address, F. Burdon, 2008 Park Ave., Montreal, Que.

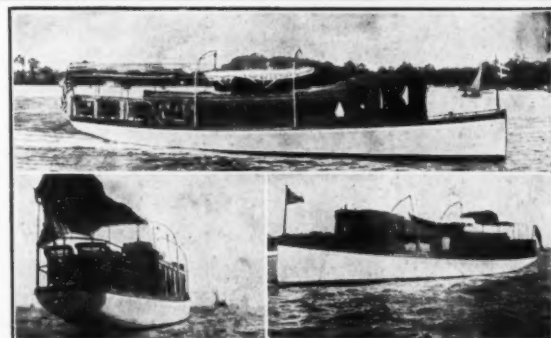
STERLING ENGINE for sale. Model B, 25-40 h.p., aluminum base, magneto, rear starting device. Model L Schebler carburetor. New condition. Full particulars from B. M. Eoff, General Electric Co., Schenectady, N. Y.

SACRIFICE. New 100 h.p. V-shaped 8-cylinder Trebut Racing Motor, value \$1,500. Clutch, rear starter, Tachometer, Columbian propeller. Perfect. No reasonable offer refused. H. B. SIMMONS, 124 W. 123d St., New York.

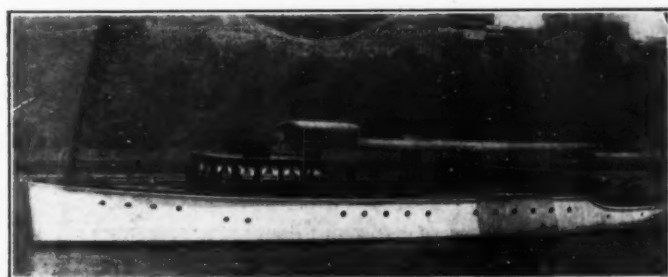
DO NOT BUY A BOAT Until you have seen my new 30 ft. raised deck cruiser, 15 H. P. engine; all equipments. Built under my personal supervision. Launched August, 1913. Write me now for particulars. D. L., care of Motor Boating.



KAZI MOTO—30 ft. x 8 ft. Runabout built by the Camden Anchor-Rockland Machine Company, Camden, Maine. Fitted with 15 h.p. two-cylinder Knox, with Knox reverse gear. This boat is first-class in every particular, the general frame being made from Maine oak; planking, Maine pine; hardware, polished brass; cushions for all seats, standard awning, automobile steerer. Speed, 9 miles per hour. One of the most powerful and best seaboats on the Atlantic Coast. Has always had the best of care. For particulars as to price, apply to Camden Anchor-Rockland Machine Company, Camden, Maine.



FOR SALE—High-class cruiser, 48 ft. x 9 ft. x 3 1/2 ft., heavy construction, from special picked material, copper fastened; cabin select quartered paneled oak, luxuriously furnished, piano, etc.; 32-h.p. heavy-duty, 4-cylinder, 4-cycle Standard motor (Standard Motor Construction Co., of Jersey City, N. J.). Write for full particulars to owner, John J. Barr, 206 West 105th Street, New York City, N. Y., U. S. A.



No. 1021.—Sale—Single-screw power yacht; speed 14 miles. 6-cylinder Twentieth Century engine, 150 H. P. Electric lights. Sleep 5 in owner's party. Boat now inspectable on the Lakes. Low price. Gielow & Orr, 52 Broadway, New York.



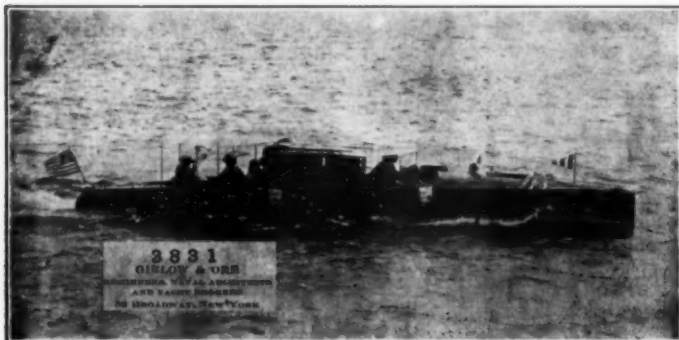
No. 2234.—For Sale.—35 ft. Elco-Express. Speed up to 23 1/2 miles; 60 H. P. 6 cyl. A. & B. motor; mahogany hull. In excellent condition, having had best of care. Equipment includes auto-top, windshield, leather cushions, lights, etc. Very desirable outfit. Bargain for quick disposal. Apply to Cox & Stevens, 15 William St., New York. Telephone Broad 1375.

FOR SALE, CHEAP—Runabout—Speed boat, hull only. Size 22 ft. x 4 ft. Capable of 20 miles per hour with a 25 horsepower motor. Hull used only one season. Round bottom, planked with cedar, finished in mahogany. Engine compartment forward; cockpit aft. Address Lindermann, 51 W. 42d St., New York City.

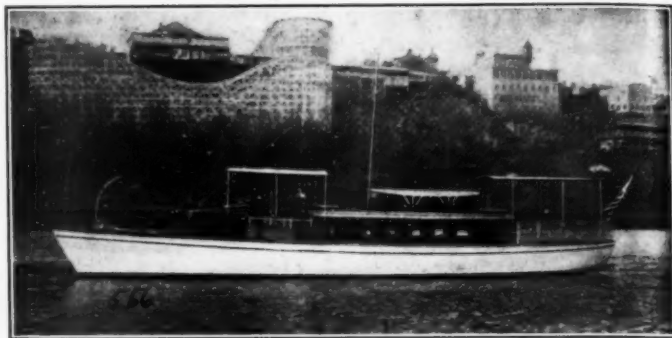
FOR SALE—33-foot, 10 h.p., 40 passenger launch; standing top; closing windows. Franklin County Engine Agency, Greenfield, Mass.

CYLINDERS REBORED—Pistons and rings fitted, new cranks, connecting rods, cases, transmissions, any part for automobile or motor boat motor reproduced like original. The shop of quality. McCadden Machine Works, Minneapolis, Minn.

THE MOTOR BOATING MARKET PLACE



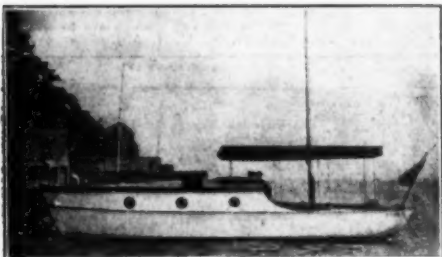
No. 3831.—Sale.—Unusually attractive day cruiser; length 49 feet; speed 19 to 23 miles. Mahogany construction. Price reasonable. Gielow & Orr, 52 Broadway, New York.



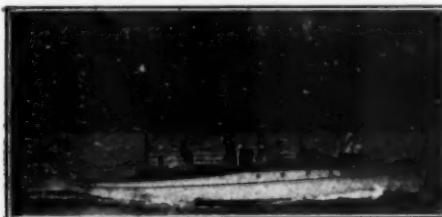
No. 566.—For Sale.—Bridge deck cruiser; 55 x 19 x 3.6 ft. Speed, 11-12 miles; 50 h.p. 20th Century motor. Mahogany finish throughout. Large saloon aft with two Pullman berths and two transoms, toilet room, separate galley, etc. Excellent condition. Price low. Cox & Stevens, 15 William St., New York.



No. 1822.—Standing roof launch, 32 x 7.4 x 2.4 ft. Built 1909. Speed, 10 miles. 21-28 h.p. motor, 2 cockpits. Forward cockpit 8 ft. long. After cockpit 10 ft. long. Finished in quartered oak, paneled. Complete equipment. Ideal boat for ferry or family service. In excellent condition. Price low. For further particulars apply to Cox & Stevens, 15 William St., New York City.



Boys! The best chance in a lifetime. If you can do better, don't write me. "Mabel E." a 28 ft. Racine cruiser, fully equipped, is for sale at a bargain. Send stamp for particulars. Everything ready to run except gasoline. Now's your chance. E. A. Gardner, 155 Glenwood Ave., Rochester, N. Y.



An exceptionally seaworthy, deep-sea cruiser will be sold at a bargain. 35 feet in length; two 45 H. P. Sterlings. In perfect condition and fully found and equipped. Complete information and inspection can be had by applying to Henry Douglas Bacon, Bath Marine Construction Company, Bath, Maine.



FOR SALE.—36 feet by 9 beam; speed 9 1/2 miles. One-man control; four-cylinder, four-cycle Jeager Engine, 25 h.p.; complete equipment; \$1200. Write to-day. Albert E. Eldridge Corp., 50 Church St., New York City.

WANT TO WIN RACES?

Semi-speed boat, all cedar, copper riveted, 28 feet by 6 feet beam; Sterling engine (1912), four cycle, 35 h.p. at 1000 r.p.m., rating about 65; speed 19 miles; won every race entered; good condition; carry eight persons; price \$800.00. Selden, 7 Washington Terrace, New York City.

FOR SALE.—Several new launch hulls, 16 ft to 25 ft. in length. Also one 35 ft. Raised Deck Cruiser. All will be sold for less than it cost to construct. If you want a bargain let us know your wants, and see if we can fill them. Address H. F. Tanner, Port Byron, N. Y.

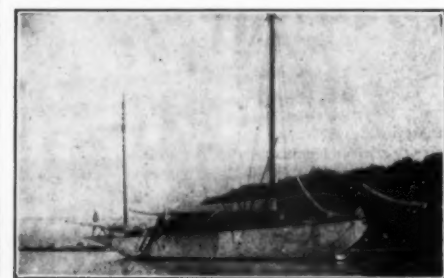
FOR SALE.—One Michigan steel boat, 18 ft. x 5 ft.; 4 H. P. Detroit reverse engine; boat and engine guaranteed by manufacturers; used but little; whistle; acetylene lights; cockpit cover; puncture proof and non-sinkable. Complete, \$200. One 26 ft. x 5 ft. wood hull, 4 cyl., 4 cycle, 16 H. P.; clutch; jacket; pump; cover; fine condition. A bargain. Guaranteed. \$275. A. E. Barker, Grand Rapids, Mich.

DO NOT BUY A BOAT
Until you have seen my new 30-ft. raised deck cruiser, 15 H. P. engine, all equipments. Built under personal supervision. Launched August 13th. Write me now for particulars. THOS. B. CRANE, 43 Academy St., Long Island City, N. Y.

FOR SALE.—Open launch "Awa," designed and built by F. S. Nock, 1911. Normand type of stern, mahogany trim, canvas covered decks. Engine is a two-cylinder, 7 1/2 h.p. "Buffalo," with reverse gear, Bosch magneto, monel metal Maxim silencer, Aaron bilge pump. Copper, tank, etc., khaki spray hood, anchor and warp, and complete equipment. Very strong and capable of towing heavy loads. Price, \$400. For other particulars address F. S. NOCK, East Greenwich, R. I.



FOR SALE.—This big, roomy convenient boat; built only two years ago; 38-footer; 10 ft. beam; raised deck cabin, will sleep six comfortably; speed 9 miles; one-man control; special price \$1200. Write for more detail to Edward Keil, c/o Albert E. Eldridge Corp., 50 Church St., New York City.



FOR SALE.—Excellent auxiliary yawl, 70 ft. 46 W. L. 17 ft. beam, 7 ft. 6 in. draft. Complete in detail and will be sold at a bargain and will stand expert survey. Address "M," Box "G," Huntington, L. I., N. Y.

AMBITIOUS MAN desiring profitable business connection can secure distributing agency with power to appoint sub-agents for KEROGU marine motor. Big opportunity as motor uses cheap kerosene or gasoline and sells at reasonable price. Will supply demonstrator at about factory cost and advertise locally. Reply by letter with references. CONSOLIDATED KEROSENE ENGINE WORKS, Chamber of Commerce, Detroit, Michigan.

THOROUGHLY rebuilt, 30-35 H. P. heavy-duty, 8 1/2-in. bore, 9-in. stroke engine; speed 375 R. P. M.; Schebler carburetor, lubricators; Paragon gear installed on base with engine, air pump and coupling; guaranteed; \$390.00. The Clay Engine Company, Cleveland, Ohio.

STROMBERG CARBURETORS, 1 1/4 inch—1 1/2 inch. Any type. Absolutely new and the latest models. One-third off Regular Cash Price. Will ship to responsible parties for inspection. Address DEPT. L, BOX 1252, Providence, R. I.

WANTED—I WILL PAY \$50 FOR FIRST COPY OF MOTOR BOATING, JULY, 1913, received. W. C. READ, c/o UNION CARBIDE COMPANY, SAULT STE. MARIE, MICH.



17 ft. stepless Hydroplane, 25 to 27 mile speed; 25 H.P. three cylinder Pierce Budd engine, Bosch magneto; hull of oak and cypress construction, mahogany decks and finish; self-aligning bronze strut and bearings; brass screw fastened throughout; used only half dozen times; price \$700 cash. Can be seen at Evanston Yacht Club, Chicago. Address Stewart, 16 Balmoral Place, Winnipeg, Canada.

FOR SALE.—Champion speed boat "Haida Papoose II," 30-foot Smith-Ryan hydroplane; 150 h. p.; eight-cylinder Sterling; built summer 1913. Winner of Free-for-all, Kansas City; Perry Centennial Free-for-all, Buffalo; Blackston trophy, Buffalo; Perry Centennial Free-for-all, Louisville. Second in Chamber of Commerce cup, Buffalo; Speed trial cup, Buffalo; Thomas trophy, Buffalo. First or second in every race started. Beaten every boat in races to which she raced second in speed trials. Has made better than fifty miles an hour in official speed trials. Inquire of Max C. Fleischmann, No. 419 Plum St., Cincinnati, Ohio, or Smith-Ryan Boat & Engine Company, Algonac, Michigan.

LESS THAN COST.—We have on hand a supply of boat fittings and marine hardware of all kinds, including shafting, propellers, cushions, spark coils, etc., which we will not use in the construction of our 1914 models. Stock listed is new, only a small part being slightly shop worn. Complete list of this equipment, with prices for same, will be furnished upon application. THE W. H. MULLINS CO., Salem, Ohio, U. S. A.

FOR SALE.—Rutenber motors, brand new, 4-cylinder, model 27, 3 1/4 x 5 1/4, 25-30 H. P., complete with fan, oiling system, flywheel, exhaust and water manifolds, spark plugs, water pump, and also magneto attached. Motor on bloc. All valves enclosed. Price, complete, \$225.00. AUTOMOBILE APPLIANCE CO., 1714 Michigan Ave., Chicago, Illinois.

CANADIANS, Second-hand engine bargains. Send for list. Guarantee Motor Company, 73 Bay Street, North, Hamilton, Ont., Canada.

PRICES cut in two. Special sale sample launch hulls from 16 ft. to 36 ft., family and speed type, also several second hand bargains of our own make we have taken in trade. Send for list. Everett Hunter Boat Co., MeHenry, Ill., Dept. B.

USE "SNAPPER" ENGINES for your small boat. They are a big little engine built by The Automatic Machine Co., Bridgeport, Conn.

A BARGAIN.—6-cylinder Speedway engine, 30-60 h.p., all latest improvements, Bosch magneto, Kingston carburetor, copper tank, bronze shaft. Room 803, 74 Broadway, New York City.

WILL exchange automobile in fine condition for first-class cruising motor boat. Send photo and full description. Sheldon, 151-4th Ave., Newark, N. J.

I HAVE for sale a new displacement type hull, 25 foot 10 long by 4 feet 6 beam. Cypress planking, oak stern and ribs. Lining, decks and combing all finished in mahogany. Can be made with power to run 35 miles. She is a beautiful craft. Seats 5 people. Two mahogany chairs, auto steering wheels. Price, \$225. Dick Barrett Boat Mfg. Co., Muskegon, Mich.

FOR SALE.—One 36 h.p., 3 cylinder, Model T Gray Motor with Paragon Clutch attached on extended base, including bronze shaft, bronze propeller, three carburetors and other equipment. All in good condition. Price, \$185.00 f. o. b. Tuscaloosa. S. F. Alston, Tuscaloosa, Alabama.

BARGAIN.—2 h.p. Detroit engine. Perfect condition. Price, \$20. FRANK MAYER, 6 Shenango St., Greenville, Pa.

FOR SALE.—21 x 5 oak deck launch, 8 h.p., 2 cylinder engine, reverse gear, rear starter, bronze-fitted auto top, spray hood and cover; outfit cost \$750; will sell \$400. Apply BOX 1, MoToR Boating.

FOR SALE.—Houseboat, 18 x 70 ft., scow; suitable for canoe club, studio, seashore, business or family. Room 302, 939 Eighth Ave., New York City.

NAVAL ARCHITECTS & YACHT BROKERS

ATKIN-WHEELER COMPANY.
HUNTINGTON, L.I.N.Y.
YACHT
BUILDERS,
DESIGNERS
AND ENGINEERS.

ARTHUR BINNEY
Successor to EDWARD BURGESS
NAVAL ARCHITECT AND YACHT BROKER
Wason Building, 70 Kilby St., Boston, Mass.
Agent for The Standard Marine Motor, The Commercial
Acetylene Co. (Safety Storage System.)
TELEPHONES:
Office, 2702, Main. Residence, 8023-2, Brookline
YACHT BROKERAGE DEPARTMENT:
Commission on Sales, 5 per Cent. Commission on Charters,
10 per Cent.

BOWES & MOWER

Naval Architects and Engineers
Yacht and Vessel Brokers
Offices, Lafayette Bldg., Chestnut and Fifth Streets
Bell Phone **PHILADELPHIA, PA.** Cable Rome

A NEW ENGINE FOR YOUR PRESENT ONE

BRUNS, KIMBALL & COMPANY, INC., 132 Liberty Street,
New York City, will make you a most liberal allowance on
your present engine in exchange for a new one. Let us
know your requirements.
OVER 2,500 YACHTS AND LAUNCHES FOR SALE.

COX & STEVENS

Engineers and Naval Architects
Yacht Brokers

16 WILLIAM STREET, NEW YORK CITY
TELEPHONE 215 BROAD

JAMES CRAIG

127-841 Garfield Ave. Jersey City, N. J.
Tel. 2237 Bergen.

DESIGNER AND CONSTRUCTOR OF
MARINE GASOLINE ENGINES AND
SPECIAL MECHANISMS, SEVEN TO
THREE HUNDRED HORSEPOWER

JOE FELLOWS
Yacht & Launch Co., Inc.
ARCHITECTS AND ENGINEERS
4 Railways 60 to 300 Ton
Sterling Wolverine Eagle Campbell
LOS ANGELES WILMINGTON SAN DIEGO
Salesroom Main Yard and Office

SELL YOUR OLD BOAT OR MOTOR

By placing an advertisement in

MOTOR BOATING

MARKET PLACE

It costs you only 3c per word

LUDERS Designers and Builders of
Motor Boats 10 to 110
feet long.
MARINE CONSTRUCTION COMPANY
Designing and Building of
all Types of Power
Boats a Specialty.
Stamford, Conn.

FREDERIC S. NOCK
NAVAL ARCHITECT AND YACHT BUILDER
MARINE RAILWAYS, STORAGE, REPAIRS
EAST GREENWICH RHODE ISLAND

The Motor Boat Shows.

(Continued from page 30)

The New York Coil Co., New York, are showing at New York and Chicago their full line of marine ignition devices, including their well known Rhoades unit spark system, made up in perfect waterproof construction. This system is claimed to operate for practically an entire season on one set of six dry cells. It delivers a magneto type spark of the same heat value, it is said, regardless of the speed of the engine. A feature of extreme importance in two-cycle work is that it cannot deliver a spark if the engine is reversed, and so avoids the risk of trouble from explosions in the crankcase. Their complete line of ignition coils for all types of engines will be shown.

David Kahnweiler's Sons, New York, have a very complete exhibition of their marine accessories and necessities at the New York Show. Numerous types of life preservers, cork buoys, bumpers, cork and canvas fenders are shown in addition to their Simplex fire extinguisher. Descriptive literature about this extinguisher is distributed, and a demonstration of its effectiveness in subduing a flame is given.

J. K. Halsey, of New York, is showing at Madison Square Garden the Racine portable rowboat motor made by the **Motor Oars Co.**, Racine, Wis. This motor, which is of the 2-cycle type, develops 2 h.p. at 800 r.p.m., but the makers state that its flexibility is so great that it can be slowed down to 300 r.p.m. without missing, and speeded up to 1,200 r.p.m. It is said that the motor never backfires, and that it can be throttled as readily as motors of the 4-cycle type. It is so light that it can be carried with ease; it can be attached to the stern of a rowboat in a few minutes' time, and once in place is said to drive the boat at a speed of 8 miles per hour. **Mr. Harry F. Dexter**, of 16 Exchange Place, New York City, is the New Jersey representative.

The Heinze Electric Company, of Lowell, Mass., are exhibiting at the Garden, in addition to their well known line of timers, coils, magnetos and spark plugs, two new ignition systems. One of these which is being demonstrated is a six-cylinder, high-tension magneto, and the other a four-cylinder, high-tension, dual system magneto. In this, the armature itself is used for stepping up the current, and no outside coil is employed. This system is guaranteed in every respect.

The Debevoise Company, Brooklyn, New York, manufacturers of paints and varnishes, have a booth at the New York Show, in which they are illustrating the advantages of using their goods. In addition to a display of their paints, they have numerous panels covering the various lines of marine paints which they manufacture.

The Indian Refining Company, New York, are exhibiting at New York, in the name of the Havoline Oil Company, and have on display Havoline Marine Motor Oils and Grease. They are distributing the same as last year their Havoline pennant and sundry descriptive matter, giving an outline of their products and containing numerous testimonials from some of the leading boat and engine builders of the country who use and recommend Havoline oils. The claim of superiority of Havoline oils is based on the extensive filtration process through which they are put before being ready for the market. Because of their being filtered they can be depended on to lubricate and to keep down the carbon deposits to a minimum.

The Noyes Machine Company, South Portland, Me., are exhibiting at the New York Show samples of two and three-blade Thompson Automatic Feathering Propellers. They have a full line of them. In addition, they are showing a propeller in operation in a tank of water, the tank having a glass front through which the operation of the wheel may be observed. They also have a three-blade feathering propeller of five-foot diameter mounted on a stand.

Higgins & Seiter, of New York, manufacturers of fine china and rich cut glass, are showing at Madison Square Garden, many of their new designs in decorated china and glass

(Show exhibits continued on page 66)

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

NAVAL ARCHITECTS & YACHT BROKERS



"Piute III." Type "Hand-V-Bottom" 24-Footer for Rough Water Use. Speed 20 miles. H. P. 30.

I SUPPLY complete Hand-V-Bottom boats of the highest grade. They are built, engined and tested under my personal supervision.

Write for Quotations

Amateurs have built hundreds of successful Hand-V-Bottoms. One of these is "Old Glory II." You can build one if you work from genuine plans.

Send stamp for 1914 illustrated catalog showing successful stock designs

WILLIAM H. HAND, JR.
Naval Architect

NEW BEDFORD, MASS.

U. S. A.

T. S. POEKEL & CO.
Engineers and Designers
YACHT BUILDERS
Marine Railways Storage Sheds
Tel. Dor. 1890 NEPONSET, MASS.

Profitable Advertising

consists in placing your selling message before the greatest number of possible buyers. MoToR Boating has the largest guaranteed circulation in the marine field, reaching boat owners exclusively and of a class who can afford to buy what you want to sell.



Tel. Lombard 2285 Cable Add. "Murnwat"
J. MURRAY WATTS
Naval Architects and Engineers Yacht and Vessel Brokers
Office: 201-202 BROWN BROS. BUILDING
206 CHESTNUT STREET PHILADELPHIA

MORRIS M. WHITAKER, N. A.
NYACK-ON-HUDSON, NEW YORK, U. S. A.

Specialist in the Design of Motor Cruisers
Auxiliaries and Commercial Vessels.
Designer of over 400 successful motor craft since 1904
Sketches and quotations for designs submitted on receipt
of your requirements
Will be at the Chicago Motor Boat Show.

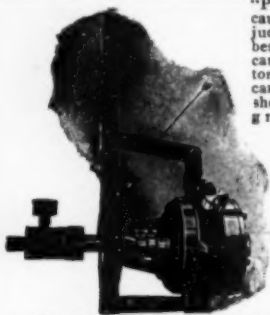
**WHITTELSEY
AND
WHITTELSEY**

Naval Architects
Engineers and
Yacht Brokers
11 Broadway
New York, N. Y.



PARAGON REVERSE GEAR

We keep telling you about the "PARAGON" because we know that you want the best gear. Consider that over 50 of the best engine manufacturers are using the



"PARAGON" because, in their judgment, it is the best gear that they can give their customers. (And we can prove it by showing you photographs of the "PARAGON" attached to their engines.)

What stronger evidence can you want that it is the gear you ought to have?

Manufactured in Taunton, Mass., by the
Evans Stamping & Plating Co.
BRANCHES—American Motors Equipment Co., 6073 Washington St., North Boston, Mass.; Bowler-Holmes & Becker Co., 141 Liberty St., N. Y. City; J. J. Farley, Machinery Dept., Bourse, Philadelphia, Pa.; Unger & Mahon, 119 East York St., Baltimore, Md.; National Boat & Engine Co. of Fla., Ft. of Main St., Jacksonville, Fla.; James M. Wait & Co., 1206 Michigan Ave., Chicago, Ill.; Missouri Engine Co., 2810 N. Eleventh St., St. Louis, Mo.; Marine Engine & Supply Co., 100 E. Seventh St., Los Angeles, Cal.; J. O. Shadegg Engine Co., 316 Third St., So., Minneapolis, Minn.; S. V. B. Miller, 72 Marion St., Seattle, Wash.
Handled in Canada by the Canadian Fairbanks-Morse Co., Ltd. Australian Representatives:—White, Fraser & Best, Sydney.

The Improved BALL REVERSE GEAR for Motor Boats

Most Reliable Highest Grade Easiest to Install
Four Sizes Carried in Stock
Send for Catalog
New York Gear Works
56 Greenpoint Ave., Brooklyn, N.Y.

Sliding Spray Hoods



Frames of brass or best quality ash, complete with all necessary fittings; cloth covering, light, durable, absolutely water proof; can be raised or lowered in 10 seconds; folds compactly.

Life Saving Devices of all kinds; Acme Fibre Cushions, Perfection Pneumatic Mattresses, Folding Canvas Boats, Life Preservers, Swimming Collars, etc.
Our Special Catalogue M, fully describing these and other sporting accessories, should be in your hands. Send for it today.

THE PNEUMATIC MFG. CO.

536 17th Street Brooklyn, N. Y.

Two Cents A Gallon for Gasoline

Use gas made from coal, coke or charcoal in your engine. It is as cheap as gasoline at two cents a gallon. $\frac{1}{4}$ to $\frac{1}{12}$ the expense of power from steam or oil. We build sizes from 18 H. P. up.

A. L. GALUSHA & CO.
311 Atlantic Ave., Boston, Mass.



The Motor Boat Shows.

(Continued from page 65)

especially suitable for yachts. Some new decorations in sterling silver are also shown. This is one of the largest and finest exhibits that this company has ever had.

The Lewis Electric Welding and Manufacturing Company, Toledo, Ohio, are making a specialty of intake and exhaust valves. These are constructed with heads of $3\frac{1}{2}\%$ nickel steel, 30 to 35% nickel steel and grey iron, and all of them are welded to low carbon stems. They also make a line of fine grey iron castings. Some of these grey iron castings are on exhibition at the New York Show, as well as a full line of the above-mentioned valves. This concern makes valve cages for engines of various size from patterns furnished by their customers. They make these complete, from furnishing the castings for machining to ready for seating in the engine. They also make valves for the cages if so desired.

Hector McRae, Baltimore, Md., is at the New York Show with a full working outfit of his "6-150" type of boat lighting equipment. This outfit, which is the most popular size produced by this house, is designed to furnish ample ignition for the usual cruiser of 50 feet and less. It burns four 16 c.p. lamps for eight hours, and running lamps and 25 c.p. searchlight can be used with it. There are many other electrical accessories in this line, of which the best known, perhaps, is the Champion accumulator. Other devices include circuit-breakers, searchlights, lamp fixtures, hand lamps, etc.

The Marine Efficiency Company, New York, are exhibiting a device at the New York Show, which, while not of direct concern to the motor boatman, will be of considerable interest to him. This device is Schmidt's Patent Davit, whereby a lifeboat can be lowered from the deck of a steamer in the smallest possible time, and by one man. The davit consists chiefly of two steel frames, bolted to the deck, in which two quadrant-arms move, held at their lowering ends by wire cables, fastened to the opposing sides of the lower end of the frame. At the upper end of these quadrant-arms steel prongs project, in which the boat hangs as soon as it has been raised above deck. The boat is hoisted and lowered by the steel cables, running through the ends of the quadrant-arms and through the pulleys at the end of the upright steel frame-posts, and thence down to the deck where the cable is wound around a revolving steel drum. By an ingenious arrangement of control, one man can lower the boat into the water, and, furthermore, can enter the boat himself and let the boat down as slowly or as rapidly as desired.

Wheeler & Schebler, Indianapolis, Ind., are showing at New York and Chicago their Model "D" Schebler carburetor which is largely used on marine engines, their Model "L" which is used by four-cylinder, four-cycle motor manufacturers, Model "H" as used on small electric generator outfits, and on tender engines, and their new Model "R." The last of these is designed for use on both four and six-cylinder motors, and is a single-jet, raised-needle type, automatic in action. There are but two adjustments—the low-speed needle adjustment which is made by turning the air valve cap, and an adjustment on the air valve spring for changing its tension. This carburetor is made in 1", $1\frac{1}{4}$ ", $1\frac{1}{2}$ " and $1\frac{3}{4}$ " sizes. Another item shown by this company is their Type B gasoline strainer, which is designed not only to collect dirt and sediment in the gasoline, but to hold back from the carburetor water formed by condensation in the gasoline tank.

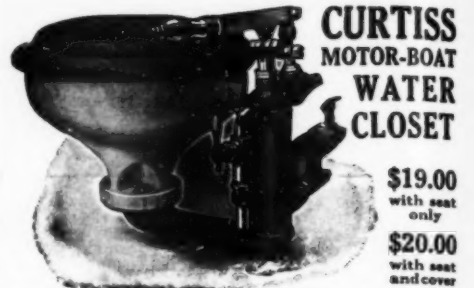
Replacing Valve Stems

(Continued from page 38)

bility of springing the guide out of alignment or injuring the seat in the valve chamber before the bushing is properly set.

All that is needed is a short piece of cold rolled steel rod of such a diameter as to nicely fill the hole in the bushing (see sketch at Fig. 2). The rod should be threaded with a die at each end, one end for a considerable distance, the other end enough to take a standard nut. The method of drawing in the guide is evident from the sketch on page 38.

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.



We built this Motor-Boat Water Closet after carefully considering the designs and requirements of small cruising boats and the demand for a low-priced fixture, suitable for above or below waterline use. When installed above the waterline it only requires a sea-valve on suction pipe. Its simplicity and ease of installation enable anyone to install it.
Pacific Coast Agents: McCaffrey Bros. Co., San Diego, Cal.; Maloy-Blanchard Co., San Pedro, Cal.; Bunde & Eriand, Seattle, Wash.; Shea Sales Co., Montreal, Canada; Gas Power & Supply Co., Portland, Ore.; Marine Engine & Supply Co., Los Angeles, Cal.; Canadian Fairbanks-Morse Co., Montreal, Canada.

Manufactured solely by
The J. H. Curtiss Co., 2 South Street, N.Y.



DAVIS DINKS

First thing the yachtsman thinks of when he needs a tender is a "Davis Dink." Row or power—8 to 14 ft. in stock. Sturdy boats—stand hard service. Conveniently arranged for passengers or supplies. 8 ft. tender weighs 65 lbs.—carries four passengers. Catalog free.

The DAVIS BOAT WORKS COMPANY
Washington St. Sandusky, Ohio

IMPROVED THERMEX MUFFLER



THERMEX SILENCER WORKS, 10 Lewis Street, East Boston
Marine Engine & Supply Co., 121 E. 6th St., Los Angeles, Calif.; Burrard Iron Works, Vancouver, B. C.; Bruce, Stewart & Co., Charlottetown, P. E. I.

Compression

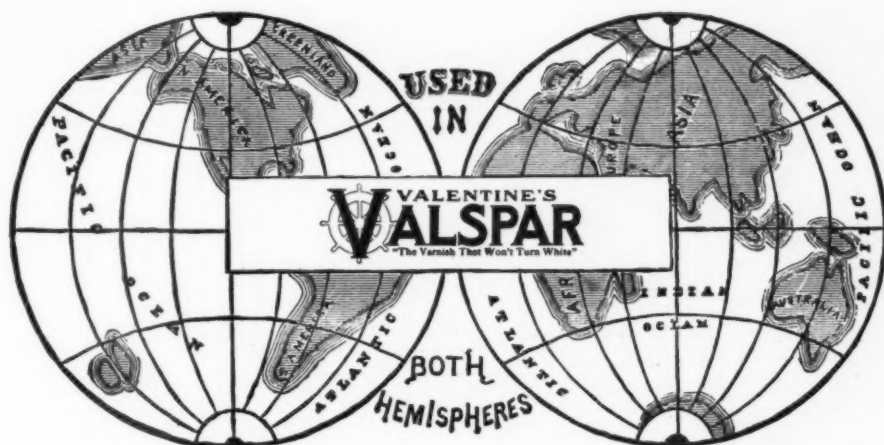
guaranteed in worn, and scored cylinders of Motor Boats, Automobiles, Pumping or Agricultural engines by our adjustable expanding pistons, without using new rings or re-boring and without sending your engine away. Any compression desired can be obtained with the turn of a wrench. These pistons have been in practical use in and around New York City for Ten Years. For detailed information and estimate write

The Wille Piston Company
1534 Fulton Street Brooklyn, N. Y.

The Aaron Automatic Bilge Pump

is the only pump that is really automatic, and the only pump that does clean your boat of gasoline fumes, and thus preventing explosions and fires on your boat.

AARON AUTOMATIC BILGE PUMP CO., INC.
Providence, R. I.



A world-wide fleet protected by Valspar

The fact that Valspar-varnished craft are in all navigable waters, generally speaking, is significant of much more than the popularity of Valspar. It is significant of quality so high as to show under *all* natural conditions.

Imagine what some of these conditions are. Valspar must withstand the heat of the Indian Ocean, the cold of the waters off Labrador, the heels of rough-shod Flemish boatmen, the violence of storms in the China Sea, the salt of the Great Salt Lake.

So well does it meet the varying requirements of these different localities that it gains continued and increasing use in each of them. Quality talks in all languages, and the universal word for quality in varnish is "Valspar."

Valspar is a hard, brilliant varnish that *never turns white in water*. Dries dust-free in two hours, hard over night. Three full coats, properly applied, may be expected to last the whole season, and longer when conditions are favorable.

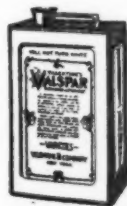
Write for our interesting book on how to varnish boats, including use of primers, fillers, stains, putty, etc. Free.

Look for us at the New York and Chicago Motor Boat Shows

VALENTINE & COMPANY, 456 FOURTH AVENUE, NEW YORK CITY

Largest manufacturers of high-grade varnishes in the world

NEW YORK CHICAGO BOSTON (Established 1832) TORONTO PARIS AMSTERDAM



The varnish that

won't turn white

MULLINS

STEEL BOATS CAN'T SINK



A constant source of pleasure not an expense—The first cost is the last cost—No expense to put in commission or maintain, outside the slight cost of painting—**Mullins Boats** are built like Government Torpedo Boats of tough, heavily galvanized steel plates with air-tight compartments like Life Boats—**Absolutely Guaranteed Against Puncture**—Never require calking or repair—Never water-log—Never warp—Never dry out—No seams to open and leak—Designed by Whittelsey the famous New York Naval Architect—Equipped with Sterling 4 Cycle and Pierce-Budd and Ferro 2 Cycle Motors—**Light—Powerful—Simple**—Can be operated by the beginner—Never stall—Never balk at any speed—**Free Book** beautifully illustrated in color will tell you all about these boats and their wonderful construction. **Write for it.**

THE W. H. MULLINS CO.

The World's Largest Boat Builders
182 Franklin Street Salem, Ohio
Cost Less—Last Longer than Wood Boats

"YANKEE" SILENT MUFFLER

The only muffler made without back pressure or noise at all speeds of the engine. Water-tight. Made of Galvanized Steel and light in weight. Made in various sizes. Over 300,000 in use. For sale in New York, by Durkee & Co., Chas. H. Miller.



"Guaranteed for Life"
R. J. Willis Co., John O. Hopkins; Chicago, Geo. B. Carpenter, 430 Wells St.; Canada, Canadian Franks Co., Montreal, Toronto and Vancouver. Write for catalogue. Manufactured only by THE "YANKEE" COMPANY UTICA, N. Y., U. S. A.

Detroit Marine Engine

Uses Gasoline or Kerosene

Demonstrate agent wanted in each boat-building community. Special wholesale price on first outfit. Amazing fuel injector saves 50% operating cost, gives more power, will not back-fire. Engine starts without cranking; reversible, only three moving parts. Detroit Engine Works, 1224 Jefferson Ave., Detroit, Mich.

KNOX MARINE MOTORS

operate perfectly on kerosene equipped with the NEW KNOX KEROSENE CARBURETOR. A radical improvement over our former model, the most efficient kerosene carburetor on the market. KNOX FAMILY RUNABOUTS—a twenty-foot boat carrying ten persons; with 3-4 H. P. motor, \$295.00; with 12 H. P., \$345.00.

Write today for catalogs.
CAMDEN ANCHOR ROCKLAND MACHINE CO., Camden, Me.

The word which is and always will be, Pre-eminent in The Marine Motor World

MIANUS
THE MIANUS MOTOR WORKS
Stamford, Conn., U. S. A.

THE NEVERSINK COAT

The Most Remarkable Garment Ever Manufactured. A REAL NORFOLK COAT—Soft, Light and Comfortable, which can be worn in place of an ordinary coat, yet a coat in which it is.

ABSOLUTELY IMPOSSIBLE TO DROWN
Write for Illustrated Booklet
American Life Saving Garment Co., 53 State St., Boston, Mass.

Noxon-Ampco Ignition System

Takes but 1 of an ampere to operate. Cannot get out of order. Cheapest and most efficient system on the market. Noiseless. Both Marine & Auto Types. Is absolutely fool proof and eliminates all insulation troubles. Has no moving wires. Write for folder 21 for details.
AMERICAN MOTOR PARTS CO.
52nd and Baltimore Avenue Philadelphia, Pa.

Yard and Shop.

(Continued from page 44)

Bruns Kimball & Co. to Handle Northwestern Motor at Philadelphia.

A deal has just been closed by which Bruns, Kimball & Co. will job the well-known Northwestern line of two-cycle engines manufactured by the Northwestern Motor Company, of Eau Claire, Wis. These engines, it is said, have attained a very strong foothold in the East. A full line of sample engines from 2 to 18 h.p. will be on display on the company's new floor, at 608 Arch Street, Philadelphia, and also a good stock of repairs. Northwestern engines have been on the market for many years and their many friends will be pleased indeed to know that a stock of engines will be on hand in the East for quick delivery.

The Electric Launch Co. Changes Its Name to the Elco Co.

The Electric Launch Company, of Bayonne, N. J., will hereafter be known as The Elco Company and remain under the same ownership and management as heretofore. In recent years this company has been most generally known by its trade-mark—"Elco"—and on account of the large variety of boats and engines which the company now builds, the change of name has been considered advisable. The company will continue to design and build all types of motor boats and motor yachts equipped with gasoline and electric power, gasoline and heavy oil engines, for pleasure and commercial uses.

When the Electric Launch Company was incorporated in 1892, the electric launch was first introduced in the country, and at that time there was a large demand for the electric-propelled boat, over fifty of them having been built the following year for use at the Chicago exposition. Electric launches continued in popularity for a number of years and are still used on inland lakes and rivers where one desires the maximum comfort, and absence of noise and vibration rather than long distance or high speed. The electric launch appeals particularly to the ladies, who can handle and operate a boat of this type with ease.

During the past twelve years the principal business of The Electric Launch Company has been in Elco motor boats, motor yachts, and all types of gasoline boats for pleasure, government and commercial uses. The Elco Company is a subsidiary to the Electric Boat Company, whose business is in the building of the Holland type of submarine. It is said that over fifty per cent. of the world's submarines are of this class and built under the patents of the Electric Boat Company.

New Loew-Victor-Powered Fast Runabout.

What will be one of the first fast runabouts in New York waters for the new year is a 30-footer now being constructed in the shops of William E. Hafl, New Rochelle, for H. C. Cushing, Jr., after designs by his brother, N. C. Cushing, of New York City. This boat is a sister to Adelaide, which won the Commodore's silver cup at the Columbia Yacht Club in 1911, and powered with a Model 13, 40-50 h.p., 4-cylinder, 4-cycle, Loew-Victor, she is expected to do better than 20 m.p.h. This motor will turn a Hyde three-blade 17 inch x 28 inch propeller 1,200 r.p.m. The planking of the boat will be 3/4 inch cedar, copper riveted to frames 3/4 inch x 3/4 inch, and spaced 6 inches on centers.

A Fast 20-Foot Yacht Tender.

In the booth of the Mercury Motor Company, New York, at the Motor Boat Show, will be found a six-foot model of a speed boat designed by Mr. Adolph Apel, of the Ventnor Boat Works, Atlantic City, for Mr. Albert H. Disston, of the Disston Saw Works, Tacony, Pa. The original of this model, which could not be shown for lack of space, is described as a sensationally fast mahogany displacement yacht tender, powered with a Mercury motor. She made 31 1/2 m.p.h. on her trial. She weighs 1,450 pounds without her crew, can be sailed easily from the parent boat's davits, and yet accommodates 7 people with ease. She turns a special three-blade propeller 1,550 r.p.m. Fitted with complete automobile control, her motor is carried forward in a watertight compartment and her fuel tank in the rear. She is said to be an exceptionally dry boat even at top speed.

Wissoe, a Converted Express Cruiser.

Frank R. Neal, fish merchant of Boston, Mass., has recently bought the old 75-foot steam yacht Wissoe and had her converted into a gasoline-driven cargo boat, for use in transporting at a rapid rate large consignments of fish from an over-stocked market to such places as are offering a high price because demand exceeds supply. Mr. Neal has had a good deal of experience with Holmes motor and so he directed the Holmes Motor Co., of West Mystic, Conn., to convert his boat and fit her with two 70 h.p. Holmes motors. That his faith in this motor was justified is shown by the fact that Wissoe is now making a mile better than she ever did in the halcyon days of steam. In making over the boat her hull was strengthened and the luxurious staterooms were torn out to make room for fish pens with a capacity of 300 barrels bulk. A set of heavy foundations was prepared for the motors which occupy the after cabin, and a 900-gallon steel tank for fuel was strapped under the after deck. Water tanks holding nearly three barrels were placed in the bow to assist in trimming ship. Although her machinery is well aft, Wissoe trims to best running lines with her hold full of fish.

She is equipped with a 3 h.p. Ferro direct-connected electric generating plant, and has a 5 h.p. hoister, supplied by the Gray-Aldrich Co., Boston, for handling her cargo. With her present propellers her Holmes motors are delivering more than their rated power at 480 r.p.m. and are driving the boat at 15 nautical m.p.h.

The Motor Car of the Sea.

In new bulletin just got out by Albert Hickman, of Boston, and the Viper Co., and numbered 16, there are cited in detail the many advantages claimed for the Viper Fifth type of inverted V-bottom sea-sealed, which is called the motor car of the sea. In this bulletin, which is illustrated with 16 reproductions from photographs, great stress is laid on the comfort which is claimed as one of the chief advantages of the sea-sealed even when running at high speeds and in water rough enough to cause severe discomfort to passengers in the older types of boats.

(Continued on page 70)

MONDEX HELIX GAS MIXER
REDUCES YOUR GASOLINE BILLS 25 TO 40 PER CENT.
Send for Free Sample Mondex Polish
THE ARISTOS CO., 250 W. 54th St., N. Y. Write for Booklet W.

HITCHCOCK'S
Automatic Bilge Bailer
Price \$5.00 from all dealers.
AUTOMATIC BILGE BAILER CO.
119 St. Mary's St. Brookline, Mass.

Ryanize SPAR Finish
Without a doubt the toughest and most durable spar finish made
Stands Rough Weather
BOSTON VARNISH COMPANY, Everett Station, BOSTON.

IF YOU WANT PERFECT IGNITION
BOSCH
Magnetos and Plugs will give it
BOSCH MAGNETO CO., 231 W. 46th Street, New York

MARINE MODELS
PATTERN MAKING INVENTIONS
DEVELOPED, SPECIAL MACHINERY
THE H. E. BOUCHER MFG. CO.
20 FULTON STREET, N. Y., U. S. A.

Why? Why? Why?
Why be out of date? Why use out of date paint?
Why scrub off the bottom of your boat?
Why not take advantage of new ideas?
Why not be up to date? Why not buy Bridgeport Bronze Paint and never have to haul or scrub off your boat "in the good old summer time"?
Bridgeport Marine Bronze Paint Co.
Cable Address, "Laquero Bridgeport." Bridgeport, Conn.

The Brown-Collins Engine
1 1/2—20 H.P.
1 to 4 cylinders
The Brown-Collins Gas Engine Co.
Hartford, Conn.

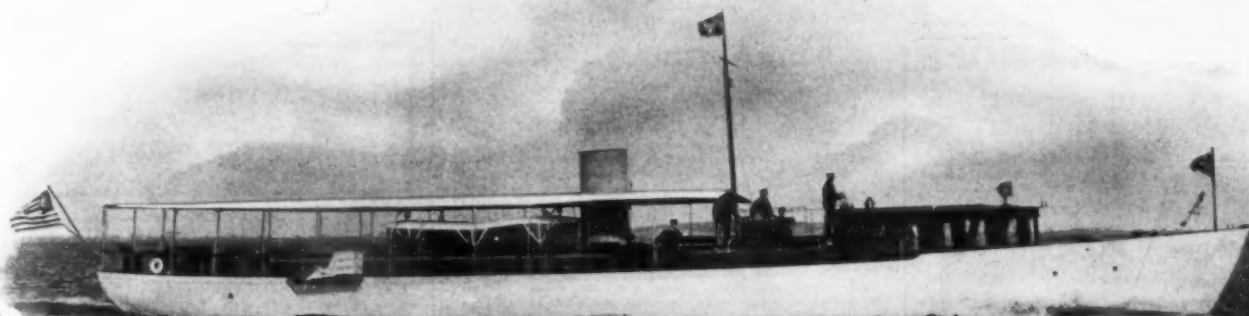
CELLO Searchlights
Guaranteed to run on six common dry batteries.
The powerful light is all in the reflector.
\$10.00 to \$16.00, postage paid.
Send for special circulars.
A. S. Campbell Co., 284 Commercial St., Boston, Mass.

CHELSEA CLOCKS
Clocks for use on yachts, steamships, etc., with (patent applied for) electric attachment for operating ship's bell. Made by the largest makers in America of exclusively 8-day high grade marine, ship's bell, mantle and auto clocks. Write for price list today.

CHELSEA CLOCK CO.
16 State Street BOSTON, MASS.

HACKER-HYDROPLANES
KITTY HAWK II. OFFICIAL RECORD, 44.48
GUARANTEED 35, 40, 45 & 50-MILE HYDROPLANES AT ATTRACTIVE PRICES.
16, 17, 19-ft. One Design Hydroplanes furnished in First Knock-downs, Complete or with guaranteed speeds of from 30 to 35 miles. Write me for prices.
JOHN L. HACKER, N. A.
313 Hibbard Ave. Detroit, Mich.

COE'S RIBBON GOLD LEAF
FOR GILDING
Nameboards, Streaks and Figureheads. Easily and quickly applied. No blowing away in the wind. No waste of material. Has been used for 10 years. By leading boatbuilders everywhere.
Write today for catalog and prices.
W. H. COE MFG. CO.
Franklin, N. H.



Power Yacht "ELKHORN"
Now being Equipped with Two
125 H. P. Winton Engines

Assure the Success of Your Power Yacht
by installing

WINTON MARINE ENGINES

That a yacht can be no more successful than its power plant is a fact proved by the large number of well designed and constructed boats that are classed as failures.

Therefore, it is vitally important that the prospective owner *thoroughly* investigate the merit of the engines which commend themselves to his attention, for the engine industry is passing through an evolution, and the successful engine of the past is not necessarily the successful engine of the present.

The owners of the largest and finest power yachts now in course of construction have investigated and have chosen Winton Engines in preference to all others.

In the Winton Engine, departure from conventional design and the incorporation of new features (exclusively Winton) have eliminated sources of trouble long associated with marine gasoline engines.

An engine has been evolved that combines certainty of performance with qualities of operation heretofore impossible of attainment. So quiet as to be practically noiseless, with an entire absence of vibration, this engine is the marvel of all who have seen it.

Our various sizes of Power Plants, Lighting Sets and Yacht Tender Engines are available for demonstration to all interested persons.

The Winton Gas Engine & Mfg. Co.

2116 West 106th Street

Cleveland, Ohio



Neverout Searchlights

for electricity or acetylene gas.

Booklet mailed free.

ROSE MFG. CO.

937 Arch St., Philadelphia, Pa., U.S.A.

SAMSON TILLER ROPE



Waterproofed
Solid braided cotton with center of phosphor bronze wire.
Strong and durable, and will not stretch or rust. Send for sample.

SAMSON CORDAGE WORKS, Boston, Mass.

4 HP to
GASOLINE
AMERICAS
QUALITY
SMALLEY
1713 TRUMBULL ST.

250 HP.
KEROSENE
OLDEST
ENDURES
GENERAL CO.
BAY CITY MICH.

SPAR COATING

a perfect finish for all woodwork, spars and ironwork
Manufactured by **Edward Smith & Co.** Varnish Makers
West Ave. 9th and 7th Sts., Long Island City for 60 years
P. O. Box 1780, New York City
Western Branch, 3532-34 S. Morgan St., Chicago

Polarine

Best Oil
Handiest Can

Standard Oil Co. of New York

STANLEY MARINE MOTOR

High in Quality—Low in Price

THE STANLEY CO.

SALEM, MASS.

Send for Catalog

READY *Sturtevant* TO RUN ELECTRIC VENTILATING SETS

for ventilating cabins, toilets, etc. Give positive ventilation. Run from storage batteries. Hundreds in use on U. S. Navy Ships.

B. F. STURTEVANT COMPANY, Hyde Park, Boston, Mass.
And all Principal Cities of the World.

WILLIAM E. THOMAS & CO.

SPRAY HOODS

Brass Frames and Fittings covered with government khaki duck. The best hoods on the market. Send for prices and catalogue.

42 South Street, NEW YORK, N. Y. Telephone 1815 Broad.

The Star Air and Water Pumps

W. & J. TIEBOUT

MARINE HARDWARE

No. 118 Chambers Street, New York

TREBERT

GASOLINE ENGINES
Poppet Valve Type—4/40, 4/60, 6/60, 6/75—Heavy Duty.
Y-Pliston Valve Type—8 Cyl., 80-100 H.P.; 16 Cyl., 160-200 H.P. If you wish to reach the mile-a-minute speed, your boat should be powered with our "V"-shape Pliston Valve Engine. Write today for complete catalog and prices.
H.L.F. Trebert Engine Works, 495 St. Paul St., Rochester, N.Y.

Tuttle Marine Motors FOR EVERYTHING FROM A CANOE TO A CRUISER

18 Years' Experience. Unlimited Guarantee. Write for Catalog.

TUTTLE MOTOR CO., 615 N. Main St., Canastota, N. Y.

Yard and Shop.

(Continued from page 68)

The reason for the easy motion of boats of the inverted V-bottom type is that the spray instead of being thrown out to either side, where, incidentally it is in a prime place to be blown inboard by a cross-wind, is thrown down and under the boat, forming a cushion of compressed air on which the forward part of the boat lights after rising on a wave. It is said of these boats, which are Mr. Hickman's invention, that the sensation obtained when riding in them is only duplicated in machines which travel through the air—that compared to ordinary boats they are as long-bladed racing skates are to the short, uncomfortable, rocker blades.

The readers of this magazine are fairly familiar with the radical features of the Viper Fifth type sealed, so a few words here will suffice to describe them. There is almost no point of similarity between the sealed and displacement boats or hydroplanes, for where the bow of these other types ends in a sharp edge, the bow of the sea-sled is blunt and wider than the stern. By reason of the inverted V-bottom the waterlines are outcurving instead of incurving—an arrangement which is said to do away with tripping—and the top sides are parallel fore and aft. When planing, the sled seems to rise almost bodily out of the water, instead of pointing her bow in the air. Propulsion in this boat is also new—screw propellers giving way to surface propellers, which never operate with more than two blades in the water at one time. Steering is by side rudders—another novelty—and because of the little water required for rudders and propellers, the sled can skim easily over water only a foot deep.

In Regard to Carbureters.

The R. O. C. superheater heats the fuel direct just before it is fed to the carburetor while it is in a liquid state, but it is not vaporized until it is sprayed into the mixing chamber; it then evaporates by its own heat, for the same reason that water blown from the blow-off of a steam boiler immediately evaporates.

In the R. O. C. superheater a small quantity of fuel is surrounded by a jacket kept hot by exhaust gases being let through it by means of a small pipe tapped into the exhaust pipe close to the engine.

This heating takes place shortly after starting the engine, and it is claimed gives the following advantages:

1. All the fuel sprayed into the mixing chamber evaporates during every suction stroke of the engine, thus forming a uniform mixture at all engine speeds, and therefore a marked reduction in gasoline consumption.

2. No liquid gasoline ever reaches the cylinders, no matter what the shape of the inlet manifold may be, and therefore the lubrication of the cylinders is not affected; meaning less cylinder oil, less cylinder wear, the same mixture for all cylinders, and therefore a more steady running motor with less wear and tear on the moving parts.

3. A more rapid ignition, insuring more power.

4. A lower grade of fuel can be used with perfect combustion, and therefore less smoke and carbon formation.

This device is handled by the National Economic Supply Co., 1777 Broadway, New York City.

A Motor Life Boat Cruiser.

(Continued from page 34)

partment from without, no matter how rough the sea is. Fuel tanks are under seats in the self-bailing cockpit, therefore, in case of leaks, they cannot drain into either motor compartment or cabin. In fact, one may smoke or start the stove in the cabin without danger. This safety from fire is a marked departure, years ahead of the best thought as applied to small sea-going craft. Fires, by the way, are most commonly the result of a kick-back of the motor caused by some congestion in the fuel pipe. The Holmes life-boat laughs at kick-backs and has conquered a menace. Construction of the Holmes motor makes it easily possible to draw fangs from a flare by piping the carburetor air intake inside the base. The motor, therefore, scavenges the base as well as the entire compartment. Moreover, it is impossible to fire into the bilge because the cement floor of the compartment prevents no bilge wherein vapor may lurk.

All motor controls are on the compartment bulkhead, including the compressed air starting device and other details connected with operation of this flexible, get-at-able engine. Every door that pierces a compartment shuts against gaskets by means of a stout, instantly manipulated locking device, every appliance being calculated to be fool-proof. The motor uses kerosene for fuel, cutting cost of operation to 30 cents per hour with cruising radius of several hundred miles. Selection of kerosene resulted from exhaustive efficiency tests conducted by the Holmes plant that demonstrated entire feasibility of the fuel under any possible working condition. A wireless telegraph apparatus, a powerful searchlight with current generated by dynamo connected to motor, have been incorporated in the remarkably complete equipment of this little boat.

A feature that compels admiration is ability of the Holmes life boat to tow a string of common open boats away from suction when the big ship disappears, or to keep the helpless row boats from crashing against the steel plates of a dying liner. With her tow the Holmes boat may shape a compass course direct for land or, perhaps, head in a direction whence comes some rescue ship in answer to a wireless appeal.

The R. O. C. Superheater



Illustrating Interior of Gas and Exhaust Chambers

Heats the gasoline hot before it is fed to the carburetor. No liquid gasoline ever reaches your cylinders. Insures more rapid ignition, increases motor power, reduces carbon formation; actually reduces gasoline consumption. GUARANTEED.

Proposition for agents. Write for catalogue.

National Economic Supply Co., 1777 Broadway, NEW YORK.

Standard Life Preservers.....	\$2.00
Universal Motorboat Life Preservers.....	1.50
Swimming Floats.....	1.25
Speedboat and Aeroplane Life Preservers.....	5.00

Real life preservers. Hold head out of water even when completely exhausted or unconscious.
Filled with Prime Japan Java Kapok and patented. Fulfill requirement of Motor Boat Laws. Make fine cushions, too.
Sent on approval on receipt of price. Dealers wanted.
UNIVERSAL SAFETY MATTRESS CO., Inc.
323 E. PRATT ST. BALTIMORE, MD.

We are manufacturers of
**Flags, Canvas Specialties
and Marine Hardware**
THE UPSON-WALTON CO.
1310 WEST 11th ST., CLEVELAND, OHIO



WATKINS' SPECIAL MOTORS
3 H.P. Single Cylinder - 30 lbs.
5 H.P. Double Cylinder - 60 lbs.
18 H.P. Four Cylinder - 100 lbs.
A strictly HIGH GRADE Motor that will give CONSUMPT and EFFICIENT service. Especially adapted for CANOES and LIGHT BOATS. Aluminum base, copper water-jackets, steel shaft, bronze bearings.
THE WATKINS MOTOR CO.
524 Baymiller St. Cincinnati, Ohio



WHITE BOAT CEDAR.

Mahogany, and all other Boat Woods.

A large assortment of sizes. Lots to meet your particular requirements. Immediate quotations. Prompt shipment.

WM. P. YOUNGS & BROS.

First Avenue and 35th Street, New York

Established over 50 years. Telephone, 2710 Murray Hill

TOPPAN POWER DORIES AND MOTORS



Safe. Best Sea Boat Built. \$150 up. Send for Catalog.
KNOCK DOWN DORIES EASY TO BUILD.
Send for Free K. D. Circular and Prices.

TOPPAN BOAT MFG. CO., 21 Haverhill Street, Boston, Mass

THE CURTISS FLYING BOAT

Our Booklet Shows 20 Pictures Taken on the Water, on the Land and in the Air. This Book Will Help You Understand Why Mr. G. M. Heckacher, of Dixie IV, Said: "It's Safer, Faster, More Comfortable than Any Hydroplane." The Book Is Free If You Write To

CURTISS AEROPLANE COMPANY

33 Lake Street HAMMONDSPORT, N. Y.

Murphy Marine Varnishes
once used become a habit

THE LEECE-NEVILLE

STARTING and LIGHTING SYSTEM

Eliminates Hand Cranking—Press Button and Your Motor Starts.

THE LEECE-NEVILLE COMPANY

Cleveland, Ohio. (17)

LISK'S MARINE ENGINES
1 to 6 Cylinders 5 to 40 H.P.
Manufactured by
GEO. A. LISK
1190 West Jefferson Avenue, Detroit, Mich.

McCLELLAN TOPS AND SPRAY HOODS

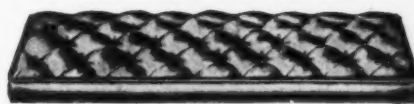
The Kind of Quality That Is Economy.
McClellan Auto Boat Tops are operated without detaching any part of framework, giving true one-man control. Our Simplicity Spray Hoods are used in all U. S. Life Saving Boats. Quality, materials, workmanship, design the best. Write today for catalog.

GEORGE P. McCLELLAN

FALL RIVER, MASS.

KENYON

Cushions and Pillows



A Kenyon Boat Cushion

Are a valuable part of the equipment of any motor boat or yacht. They are made from "Kapoc," a flax, which we bring from far Java. This flax floats like a bubble on the water and is so resilient that when used in cushions or pillows they always retain their shape and firmness. Thus the Kenyon boat cushions and pillows are both



The Kenyon Life Preserver Pillows

Life Easers and Lifesavers

affording luxurious comfort, yet in an emergency being capable of sustaining the weight of the heaviest person for two days in the water.

These cushions and pillows are handsome and durable, being made in six shades of genuine steer hide, artificial leather and velours. The cushions, tailored to fit your boat, are made with the Kenyon Never-Pull-Out Buttons, which are rustproof and guaranteed to stay in forever.

Kenyon Boat Tops

made in various styles and sizes are waterproof and form a needed protection against the elements. A proof of the efficiency of these boat tops is shown in the fact that they are found on all successful American built motor boats.

Our catalog on request.

**The
R. L. Kenyon
Company**

371 Meadow Street
WAUKESHA
Wisconsin



Gathering Kapoc for Kenyon Pillows and Cushions

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

Greatest Launch Values Ever Offered



This Handsome, Graceful, Seaworthy, Speedy Runabout complete, only **\$94.50**

Other similar values in 16-ft., 18-ft., 20-ft., 23-ft., 27-ft. and 30-footers at the same proportionate prices. We are the world's largest power boat manufacturers. Selling direct at Factory Prices, we save you one-half.

Send for Our 1914 Boat Catalog Today—Mailed Absolutely FREE!

It illustrates, with full descriptions, the famous Detroit Family Launches, fully equipped with berths, galley, etc., for extended cruises. Sixty-four models in all sizes, ready for immediate shipment. All Detroit Boats are equipped with the most efficient, smoothest running, non-complicated marine engines ever built. Starts without cranking—reverses while in motion—has only three moving parts. Guaranteed for 5 years. So simplified any child can operate it. Detroit special construction combines more speed with greater seaworthiness than any other boats made. Ask any of our 12,500 satisfied owners. We have a new confidential proposition to make a limited number of motor boat enthusiasts to act as our demonstrating representatives. **WRITE QUICK.**

Detroit Boat Co., 1147 Jefferson Ave., Detroit, Mich.



Apelco

Electric Lighting and Starting Systems for Motor Boats.
Electric Lighting and Starting Systems for Automobiles.
Electric House Lighting Outfits and Golden Glow Lamps.

Apelco products are the standard by which others are judged.

THE APPLE ELECTRIC COMPANY, 78 Canal Street, Dayton, Ohio

A Library of Fashion and Fashionable Folk For 25 Cents

WOULDN'T you like to have portraits of your friends of the fashionable set, as they appear from month to month at various social functions?

Wouldn't it be interesting to have a series of beautiful photographs, illustrating the exclusive costume balls, the smart receptions, the swagger hunt meets, the winter sports, the house parties of the social world?

A file of Harper's Bazar is a veritable library of fashion and fashionable folk, brimming over with news of "who's who" in American and European society.

Illustrations and descriptions of everything *recherché* in women's wear, weeks before the newest gowns, frocks, suits, underwear and hats appear in the shops. Models of new costumes by Poiret, Bakst, Paquin, Lucile—by all of the world-famous creators of women's attire.

Fill out the coupon below and mail it NOW, with 25 cents (in stamps if you prefer), at our risk, and we will enter your name for a special three months' subscription, beginning with the February "Winter Resort" number.

Harper's Bazar, 119 West 40th St., New York.

I enclose 25 cents for a special 3 months' subscription to Harper's Bazar, beginning with the "Winter Resort" number. Send to

Name.....

Address.....

M. B. 2-14

Harper's Bazar

119 West 40th Street
New York City

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

Cragg Motor Bargains

Guaranteed for life. Full Equipment.

Single Cylinder, 1 1/2 - 2 h.p.\$37.50
Double Cylinder, 3 - 4 h.p.57.50
" " 6 - 8 h.p.110.00
" " 8 - 10 h.p.120.00
" " 10 - 12 h.p.130.00

Send for Catalog. Agents Desired.
Cragg Motor Mfg. Co.
606 Wayne County Bank Bldg., Detroit, Mich.



CUNO TIMERS

are built for service.
FOOLPROOF — TROUBLEPROOF — WATERPROOF.
HIGHEST QUALITY
LOWEST PRICES
Used by the most prominent Marine engine builders.

Send for bulletin B.A.

THE CUNO ENGINEERING CORP., MERIDEN, CONNECTICUT

BUILD YOUR OWN STEEL BOAT

From patterns and printed instructions. Work easy; material furnished. Save 2-3 cost. Also Completed boats. Send for catalogue and prices.
F. W. DARROW STEEL BOAT CO., 920 Ferry St., ALBION, WIS.

GET A Dayton Launch Lighting Outfit

for your motor boat this season. Complete description and prices on request.
THE DAYTON ELECTRICAL MFG. CO., 186 St. Clair St., Dayton, O.

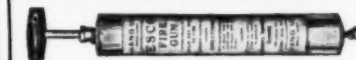
WE WIN

Perfex WATERPROOF POWER-ADDING IGNITION SYSTEMS
ASK FOR CATALOG

ELECTRIC GOODS MFG. CO., CANTON, MASS.

Know Your Engine Speed

TACHOMETERS FOR SINGLE AND TWIN SCREW BOATS. Look for us at the New York Motor Boat Show.
ELECTRIC TACHOMETER CO., 1344 Spring Garden St., Phila., Pa.



\$4.85
Postpaid
in U. S.

Esco Fire Gun

Write for Catalog and Launch Accessory Bargains.
EMMONS SPECIALTY CO., 240 Jefferson Ave., Detroit, Mich.

WHERE OTHERS FAIL LUBROLINE

OILS and GREASES
FISKE BROTHERS REFINING CO.

Established 1870
PITTSBURGH NEW YORK NEWARK



NEVER AGAIN!

Decide now to have a reverse gear for next season—the best gear you can buy—the GIES. The Gies is not the most expensive, but for safety, convenience and dependability it is without an equal. 20,000 giving satisfactory service. Every one sold on the "satisfaction or money back" plan.

Get full particulars now and be ready for 1914.

No. 1, \$15, Model A, \$24, Model B, \$45.

GIES GEAR CO., 49 E. Fort St., Detroit, Mich.



WHISTLE outfit, Compressors, Valves, Mufflers, Combination Flag pole and electric aft lights, Spark, throttle and reverse controls, Special fittings, etc., etc. Write for Catalogue D-3.

GRAY-HAWLEY MFG. CO., 937 Jefferson Ave., Detroit, Mich.

\$31 31/100 For the high grade 1 1/2 to 2 H. P. Gries Motor. Complete equipment. A two

(2) year guarantee with each motor. Write for further particulars.

GRIES ENGINE CO., 45 FORT ST. (E) DETROIT, MICH

14.

ns

837.00
87.00
110.00
120.00
130.00
d.

RS

OF -

LITY
EB
larise

TICUT

T

est.

ue

ffit

uest.
CO.,

ed

ND

o.

5

aid

B.

n

ns.

lich.

Make
otors
Make
ood"

WARK

N!

ear for
buy-
cost ex-
ce and
20,000
ne sold
" plan.

B. 940-
t, Mich.

NS

rs.
ts.
en.

to a

Com-

two

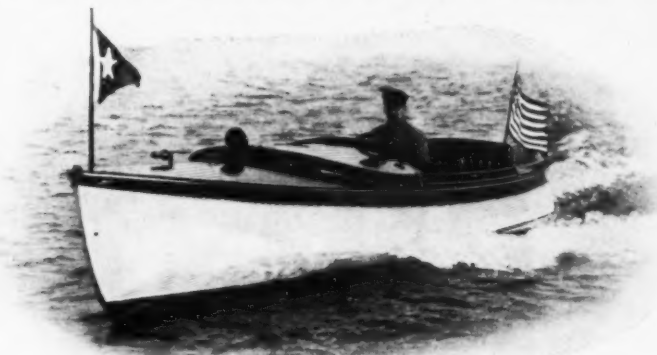
otor.

T. (E)
MICH

THE PERFECT POWER PLANT

FAY & BOWEN ENGINES

The Perfect Power Plant



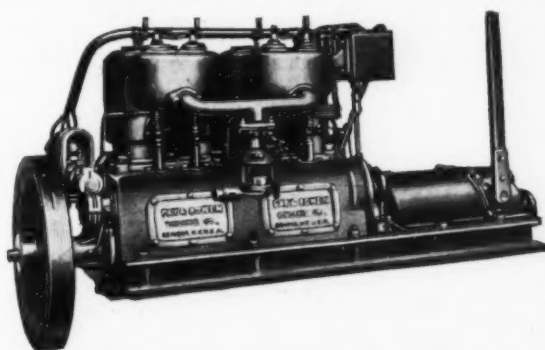
*A Fay & Bowen
26-Foot Runabout*

770,400 Revolutions Without a Stop!

On September 5th, 1913, one of our 26 ft. family runabouts with our type "L" four-cycle engine, had a

12-Hour Non-Stop Run at Full Speed

consisting of three consecutive laps of 73 miles each. Average speed $18\frac{1}{4}$ miles an hour. Three men aboard. At the close of the run the engine sideplates were removed and the bearings carefully examined. ALL BEARINGS WERE COOL AND IN PERFECT CONDITION.



*A Fay & Bowen
"Type L" Engine*

We claim that the bearings in the Fay & Bowen engine are larger for given service than in any other make.

LARGE BEARINGS mean LONG LIFE

The Chief Engineer of the Pittsburgh Railways Co. bought one of our 26 ft. runabouts. The simplicity and perfection of the Fay & Bowen engine is especially appreciated by such men.

The Fay & Bowen Engine is *the* all-around machine—the Perfect Power Plant!

Our runabouts start and drive like a car. There are no handsomer boats afloat. They are roomy, steady and seaworthy. Your winter evenings' study of marine literature will not be complete without our general catalogue and our "Bulletin 27." They cost you nothing. Shall we send them?

FAY & BOWEN ENGINE CO., 104 Lake Street, GENEVA, N.Y., U.S.A.

Look For Us at the New York Show!

Made for Canada by the St. Lawrence Engine Co., Ltd., Brockville, Ont.

THE PERFECT POWER PLANT

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.



Make This a Different— More Enjoyable Summer

Get closer to nature. Spend more time in God's big, healthful out-doors. Enjoy His beautiful, charming lakes and rivers. Skim over them at will wherever your fancy wishes. But don't let that pleasure be marred with an aching back and blistered hands from pulling at oars and paddles. Instead, become the owner of a power boat. If you don't feel that you can afford a launch, attach a Caille Portable Boat Motor to your row boat. If you haven't a row boat, buy one. If you can't buy one, rent one. But get one some way. Then buy yourself a

Caille Portable Boat Motor

Attach it to your square or pointed stern row boat by turning two thumb screws and you have a reliable little family launch—a power boat that will take you to the fishing or hunting grounds, the camp or summer home, at the rate of 7 to 9 miles an hour. Or, if you desire, you can run it slow enough to troll.

The Caille Portable Boat Motor generates 2 H. P. and weighs but 55 lbs. It is steered by a rudder like a launch—not by the propeller. This enables you to steer accurately up to a pier or landing even after the power is shut off. The rudder is of our folding stone-dodging type (Pat. applied for). The weedless propeller is protected by a substantial fin. The motor can be easily adjusted to any angle or depth of stern. It starts with half a turn of the flywheel. Runs in salt or fresh water. Can also be supplied with a high tension magneto at small additional cost.

Send for Beautiful Catalog

Every lover of boating will find this book most interesting. A postal brings it promptly by return mail.

Good Reliable Dealers Wanted

The tremendous demand that is bound to exist for this remarkable little motor makes it imperative that we have the best possible representation at all boating localities. To Dealers we also offer the sale of our widely known line of regular marine engines described on the opposite page. Our attractive agency proposition will be gladly mailed on request.

When Writing Be Sure to State
Caille Perfection
1421 Caille Street.





Get Perfect Service from Caille Perfection Motors

Ask the most enthusiastic motor boat owner you know to show you his motor. Look at the name plate. Dollars to doughnuts it will be a Caille Perfection.

He's enthusiastic because he gets nothing but pleasure from his boat. His motor never balks—never refuses to start—never gives him a moment's trouble. He takes his family and friends out for a spin with perfect confidence that they will have nothing but pleasure from beginning to end. He knows not the humiliation of having to ask a tow. He knows only the keen, sweet pleasure given by a perfect running motor—the kind of pleasure that you, too, can secure from the various sizes and types of

Caille Perfection Motors

in any style of pleasure or work boat. Every one is the result of years of careful marine motor design and construction. Every one is made by the most skillful marine motor mechanics—the cream of the world—men who have made the production of perfect marine motors their life's ambition—an ambition which readily meets its fulfillment in the Caille factory. For here they are given the best of materials, the most modern machinery and the best of working conditions. They can't help producing perfect motors—the kind that run continuously with that smooth, sweet purr.

Supplied to Burn Kerosene or Gasoline

Our Perfection Kerosene carburetor is one of the most perfect carburetors made. It enables you to use kerosene with the same success and satisfaction as gasoline. Alcohol, distillate, petrol, benzine or naphtha can also be used with perfect results. This carburetor can be furnished on any Caille Perfection Motor at small additional cost.

Built in All Sizes from 2 to 30 H. P.

and in one to four cylinder designs. We have special types for pleasure boats, work boats and speed boats. For open boat service we recommend our Perfection Ignition System. This is absolutely water proof and is unaffected by climatic conditions. It does away with batteries, coils, timers, etc.

The eight horse power unit power plant shown below is an ideal equipment for the average family launch. It embodies a reversing gear mounted on the same bed as the engine, insuring perfect alignment of shaft and reducing friction to a minimum. All working parts (except fly wheel) are fully enclosed preventing oil from splashing out on clothing.

Send for Our Marine Motor Blue Book

Describes our entire line in detail. No motor boat owner or enthusiast should be without it. Your request on a postal is all that is necessary.

Some Good Territory Still Open to Agents

But we must have good, live, hustling agents. Men capable of handling a big marine engine business and giving it the proper attention. If you are that kind of a man, we want to send you our proposition.

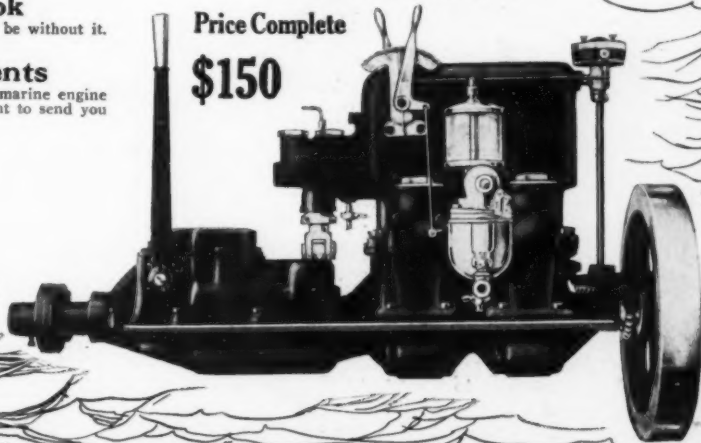
What Type of Motor You Are Interested In.

Motor Company
Detroit, Mich.

8 H. P. Caille Perfection Unit Power Plant embodying reversing gear mounted on same bed with engine.

Price Complete

\$150



When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

"SANDS" MARINE SANITARY FIXTURES

Their Quality, Construction, Equipment and Operation is the Best in the World

SIXTY-FIVE YEARS MAKING MARINE FIXTURES MEANS SOMETHING



"NATIONAL" PLATE S-3010.
(Patented—Copyrighted.)
The "National" Pump Water Closet has extra heavy Vitro-Adamant Oval Flushing rim Pedestal bowl fitted with 5" combined supply and waste pump. Complete with Mahogany seat and cover. Pump white enameled, N. P. trimmings...\$145.00

LEAD OR SCREWED JOINTS ON INSTALLATION ARE THE BEST PROTECTION TO HEALTH.



"FLORIDA" PLATE S-3015.
(Patented—Copyrighted.)
The "Florida" Pump Water Closet has new style extra heavy oval pedestal Vitro-Adamant bowl. Improved supply and waste pump having 4" cylinder. Complete with Mahogany seat and cover. Pump white enameled, N. P. trimmings...\$112.50

SANDS "PATENT AUTOMATIC SAFETY SUPPLY FOOT VALVE" CONTROLS INLET. SANDS "PATENT BACK WATER CHECK VALVE" CONTROLS OUTLET. NO FLOODING WITH SANDS FIXTURES.



"HURON" PLATE S-3035.
(Patented—Copyrighted.)
The "Huron" Pump Water Closet has new style extra heavy Vitro-Adamant flushing rim hopper bowl. 5" combined supply and waste pump. Complete with Mahogany seat and cover. Pump white enameled, N. P. trimmings...\$132.50

THE "UPKEEP" OF SANDS FIXTURES IS NEGLIGIBLE AND FIRST COST REASONABLE.



"IOWA" PLATE S-3040.
(Patented—Copyrighted.)
The "Iowa" Pump Water Closet has latest style Vitro-Adamant extra heavy oval flushing rim, straight back hopper bowl, fitted with 4" supply and waste pump. Price with quartered oak, cabinet finish seat and cover, pump rough with polished trimmings...\$85.00



"IMPROVED MOHAWK" PLATE S-3030.
(Patented—Copyrighted.)
The "Improved Mohawk" Pump Water Closet, extra heavy Vitro-Adamant oval flushing rim hopper bowl. Composition supply and waste pump three (3) inch cylinder. Pump rough with polished trimmings, oak seat and cover...\$70.00
A high-grade fixture having new style bowl, especially intended for owners' quarters of small cruisers.



PLATE S-150.
The "Glenwood" Folding Lavatory, with Vitro-Adamant roll rim tipped oval basin, N. P. copper lining, soap and brush holders, N. P. brass double-acting pump with combination swing supply faucet. N. P. brass supply and waste couplings, N. P. brass trimmings.
Quartered oak, polished finish...\$42.50
Mahogany, polished finish, add... 1.50

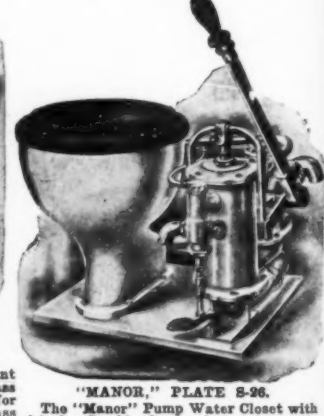


PLATE S-127.
The "Granby" Round Way Sea Cock for use on discharge pipe of closets and lavatories. This sea cock is similar to Plate S-126 except water way, which is full opening and clear round way, thus eliminating the possibility of paper or any foreign matter from clogging sea cock. Made in sizes as follows:

	Price
1 inch.....	\$4.00
1 1/4 ".....	5.50
1 1/2 ".....	7.00
2 ".....	11.00
2 1/2 ".....	16.00



PLATE S-145.
The "Hobron" Vitro-Adamant Folding Lavatory. N. P. brass combination self-closing faucet for hot and cold water. N. P. brass waste coupling and towel rack. Complete.....\$45.00
Weight: Net, 45 lbs.; Gross, 75 lbs. Dimensions: Height over all, 26 1/4 in.; width, 16 1/4 in.; depth open, 17 in.; depth closed, 7 in.



"MANOR" PLATE S-26.
The "Manor" Pump Water Closet with 4-inch Combined supply and waste pump, oval pedestal, Vitro-Adamant bowl, polished quartered oak seat and cover, automatic safety water supply foot valve. Complete.....\$100.00
Mahogany seat and cover add... 2.00

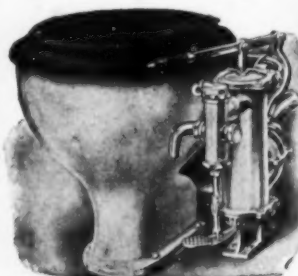


PLATE S-31A.
The "Yukon" Pump Water Closet, Vitro-Adamant oval flushing rim pedestal bowl, fitted with oak seat and cover. Composition TWO AND ONE-HALF (2 1/2) INCH combined supply and waste pump. "Sands Patent Automatic Safety Supply Foot Valve." Complete as described.....\$55.00
If mahogany seat and cover, add... 2.00



PLATE S-151.
The "Realyn" Folding Lavatory, with tumbler rack; N. P. copper lining; N. P. Copper combined round basin and slab; N. P. copper soap and brush holders; N. P. brass double-acting pump with combination brass swing supply faucet.
Made in Two Sizes
Quartered oak, polished finish...\$37.50
Mahogany, polished finish... 39.00
Height.....19 1/2"
Width.....15 1/2"
Depth, open.....16 1/4"
Diameter of basin.....10"



PLATE S-3025.
The "Alpine" Folding Lavatory, consisting of Vitro-Adamant oval basin, with splash rim, Vitro-Adamant soap dishes, metal lining white enameled, nickel plated self-closing faucet, nickel plated brass supply and waste couplings, nickel plated brass trimmings.
Complete as shown and described, with oak woodwork, or birch imitation mahogany finish \$27.50
Dimensions: Height, 20 in.; width, 18 in.; depth closed, 8 1/2 in.; depth open, 22 in. Can be fitted with combination self-closing double faucet for hot and cold water, add.....\$5.00



"COMMERCIAL"—PLATE S-2070
(Patented—Copyrighted.)
The "Commercial" Closeset designed for heavy duty in work boats, above water line only. Vitro-Adamant bowl. Galv. iron valve box on galv. iron base plate. Composition flush valve. Galv. iron lever with composition axle and valve.
As shown with metal parts white with N. P. trimmings, oak seat and cover.....\$49.00
Shipping weight, 160 lbs. Space occupied, 21" x 17".

Complete line of closets, lavatories, port lights, deck plates, basin and galley pumps described in Catalogue "R" sent upon request

A. B. SANDS & SON COMPANY

Largest Manufacturers in the World MARINE PLUMBING SPECIALTIES 22-24 Vesey St., New York, U. S. A.

1849—"SIXTY-FIVE YEARS OF QUALITY"—1914

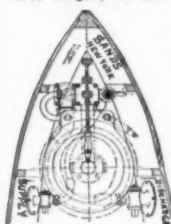
When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

THE RECOGNIZED STANDARD OF THE WORLD

An Assortment of Reliable Fixtures and Specialties for Small Motor Boats, including the popular "WINNER" and famous "BOW" Closets



THE "BOW" CLOSET, PLATE S-2050.
(Design Patent Applied For.)
The "Bow" Closet, Vitro-Adamant bowl, 2 1/2-in. pump, located at rear, fitted with swing handle. Quick opening supply valve. Space occupied, 15 x 24 in. Pump rough, with finished trimmings, oak seat, N. P. Hinges.....\$30.00
Dimensions: Front to back 23 in., width 14 in., height 12 inches.
Net weight, 35 lbs. Shipping, 70 lbs.



SUGGESTION FOR INSTALLATION OF THE "BOW" CLOSET IN EYES OF SMALL BOATS, WITH PAIR OF OUR SPECIAL SEACOCKS.



PLATE S-3183.
The "Manatee" 14-inch Vitro-Adamant Flat Back Lavatory with N. P. Basin Pump with Low Down Spout, N. P. Waste Plug, Chain Rubber Stopper and Cock Hole Chain Stay. No Trap.
Price.....\$18.50

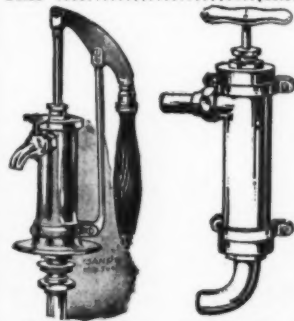


PLATE S-709.
All Brass Galley Pump, 1 1/2 in. Cylinder, reversible handle with shut-off cock.
Polished all over.....\$8.50
N. P. all over.....10.50

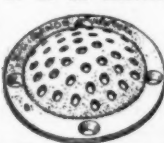


PLATE S-128.
The "Helena" Composition Outboard Connection with flap valve and coupling is used on discharge of closets, lavatories, sinks or on exhaust of engines.



PLATE S-1002.
Round Flange Composition Monitor Air Ports.
Diam. of Price
Opening Plain Opening Plain
8 in.....\$10.75 11 in.....\$17.00
9 in.....13.00 12 in.....20.00
10 in.....14.50 14 in.....26.00
Larger sizes also made.

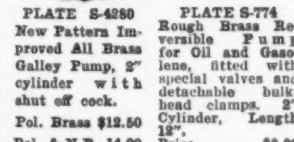


PLATE S-4280.
New Pattern Improved All Brass Galley Pump, 2" cylinder with shut off cock.
Pol. Brass \$12.50
Pol. & N. P. 14.00
Price.....\$8.00

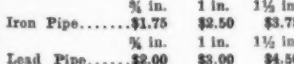


PLATE S-131.
The "Carlton" Brass Outlet Connection with long nipple and flanged locknut to make up on inside.

Iron Pipe.....1 1/2 in. 1 1/2 in. 1 1/2 in.
Lead Pipe.....1 1/2 in. 1 1/2 in. 1 1/2 in.
Lead Pipe.....\$2.00 \$3.00 \$4.50



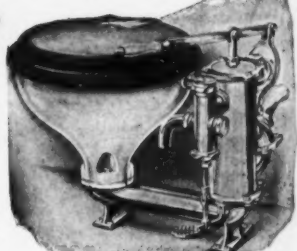
PLATE S-132.
Heavy Pattern Combination Inlet Connection, with Strainer and Scoop.
Size Iron Lead
Pipe. Pipe.
1 1/2 in. \$2.25 \$2.65
1 1/2 in. 2.50 2.90
1 1/2 in. 3.00 3.40



PLATE S-1001.
Round Frame Composition Port Light, with one clasp, for wood vessel.
Dia. Pl. Pol.
Opn. Brass. Brass.
3".....\$2.50 \$4.00
4".....2.75 4.25
5".....3.15 4.80
6".....4.40 6.00
7".....5.50 7.25
8".....6.50 8.25



PLATE S-2062.
The "Angle" Composition Flanged Sea Valves, with straight couplings and locking plate, for use on the supply and discharge of small pump closets.
Price per pair with strainer for supply \$6.00



"KNOCKABOUT," PLATE S-34.
The "Knockabout" Improved Pump Water Closet, round flushing rim bowl, composition foot valve, hinges. Pump rough, finished trimmings, oak seat and cover.....\$52.50
If mahogany seat and cover, add.....1.50
Weight: Net, 45 lbs.; Gross, 75 lbs.

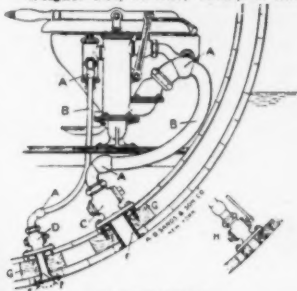


PLATE S-105A.
Suggestions for installation of any small Pump Water Closet.
A—Leadwiped joints. B—Lead supply and discharge pipes. C—Discharge sea cock, bent coupling. D—Supply sea cock, bent coupling. E—Brass strainer on supply. F—Lead thimbles of lead pipe. G—Wood blocks. H—Shows connection for single planking and sea cock with straight coupling.



PLATE S-3195.
The "Macon" 12-inch Vitro-Adamant Corner Lavatory with one N. P. Compression Faucet, N. P. Waste Plug, Chain Cock Hole, Chain Stay and Rubber Stopper, No Trap.
Complete as described.....\$7.75

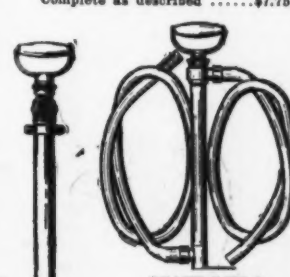


PLATE S-750-A.
New Style Double-Acting Brass Bilge Pump, with foot attachment and 5-foot discharge and suction hose with brass strainer.
Brass Gasoline No. 1—Chamber 1 1/2-in. and Oil Pumps diameter, 15 in. long with special valves a and b No. 2—Chamber 1 1/2-in. diameter, 15 in. long
Dia. Lg. \$5.00 No. 3—Chamber 2-in. diameter, 24 in. long
1 1/2 15 7.00
2 24 13.00 \$14.00

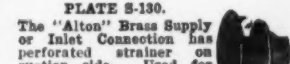


PLATE S-130.
The "Alton" Brass Supply or Inlet Connection has perforated strainer on suction side. Used for supply to closets, lavatories, engines and pumps.
Iron Pipe.....1 1/2 in. 1 1/2 in. 1 1/2 in.
Lead Pipe.....\$1.75 \$2.25 \$3.75
Lead Pipe.....\$2.00 \$2.50 \$4.25

Full Line of Ventilators, Bath Tubs, Showers, Basins, Sinks, Gasoline and Bilge Pumps Shown in Catalog "R" Free Upon Request

A. B. SANDS & SON COMPANY

Largest Manufacturers in the World **MARINE PLUMBING SPECIALTIES** 22-24 Vesey St., New York, U. S. A.

1849—"SIXTY-FIVE YEARS OF QUALITY"—1914

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.



Build Your Busi

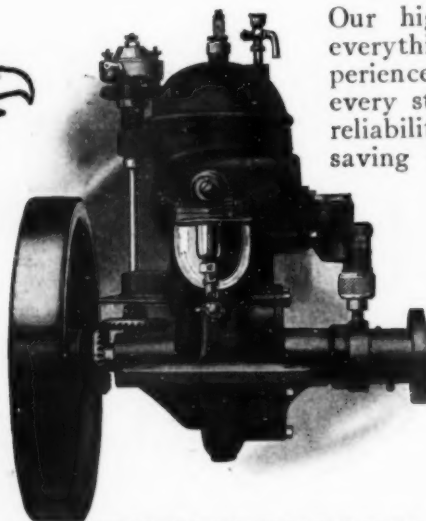
Secure the Rig

"Eagle" Two Cyc

Become associated with an organization that successful business. Arrange to sell Engines mand will be. Arrange to sell a line of and types for every purpose, an engine for

"Eagle" High Speed Models

4 Sizes



1914 High Speed Single Cylinder, Model "K" 3 1/2 H.P., Bore 3 1/4—Stroke 3 1/4—Weight 90 lbs.

Completely Equipped

with Schabler carburetor, "Black Eagle" spark plug, roller contact-timer, bronze plunger pump with self-contained check valves, priming cup, grease cups, ball thrust bearings, flange coupling, "Eagle" water-cooled exhaust silencer, wrenches, screw driver, can of cylinder oil, can of grease, two oil cans, lag screws, and instruction book.

Price, \$50.00

Our high speed engines contain everything demanded by the experienced user of marine engines; every standard of strength, speed, reliability, money saving and worry saving construction, convenience, and design have been provided. No marine engine offered today, at any price, can boast of features that "Eagle" Engines do not have; there are less parts to our high speed models than on any engine known of this type, they are light in weight, and high in power. This line is the one you require for the speed hydroplanes, "V" bottom and Bumble Bee type of boats. They will more than meet expectations and then the price is *right*.

Medium Speed Models

8 Sizes

This line of engines was designed to meet the requirements of the conservative class who prefer comfort to speed. The "Eagle" Medium speed models are in great demand. This line of "Eagle" Engines has been sold for several years and are well known for their successful and durable qualities. They

"LOOK FOR US AT THE NEW YORK

THE STANDARD CO.,

ness for All Time

ht to Supply

le Marine Engines

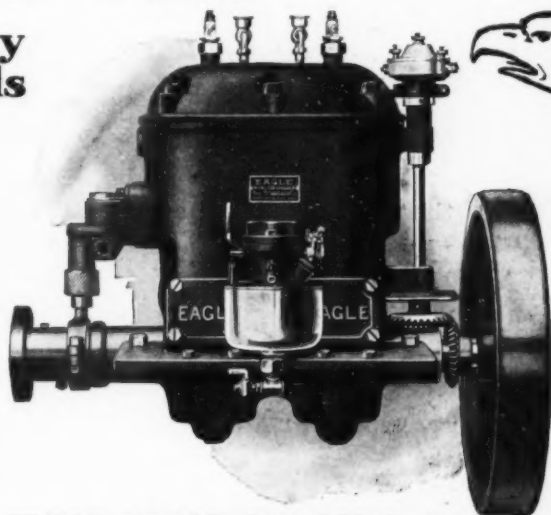
can assist you materially in building up a that the more you sell, the greater the de- engines that is complete, consisting of styles each requirement, and without substitution.

are beautifully finished, and having been properly designed in the beginning, they have never required any radical change in construction. This line is the one you require for family boats, cruisers, and light working outfits.

Real Heavy Duty Models

7 Models

For fourteen years the "Eagle" heavy-duty models have enjoyed such a good reputation that we are free to state that they have no equal as a satisfactory equipment in boats where long life, constant service, and steady work is demanded. Engines of this type are in use in all parts of the world. They enjoy a splendid reputation and prestige, due to the uniform and excellent service they have rendered under all conditions of service. This type of engine is used extensively in open-sea work, and will be found installed in cruisers, heavy work boats, as auxiliary power in catboats, and other sailing craft.



1914 High Speed "Eagle" Two Cylinder, 7 H.P., Bore 3 1/4 in., Stroke 3 1/4 in., Weight 130 lbs.

Completely Equipped

with Schebler carburetor, "Black Eagle" spark plugs, roller contact-timer, bronze plunger pump with self-contained check valves, priming cup, grease cups, ball thrust bearings, flange coupling, "Eagle" water-cooled exhaust silencer, wrenches, screw driver, can of cylinder oil, can of grease, two oil cans, lag screws and instruction book.

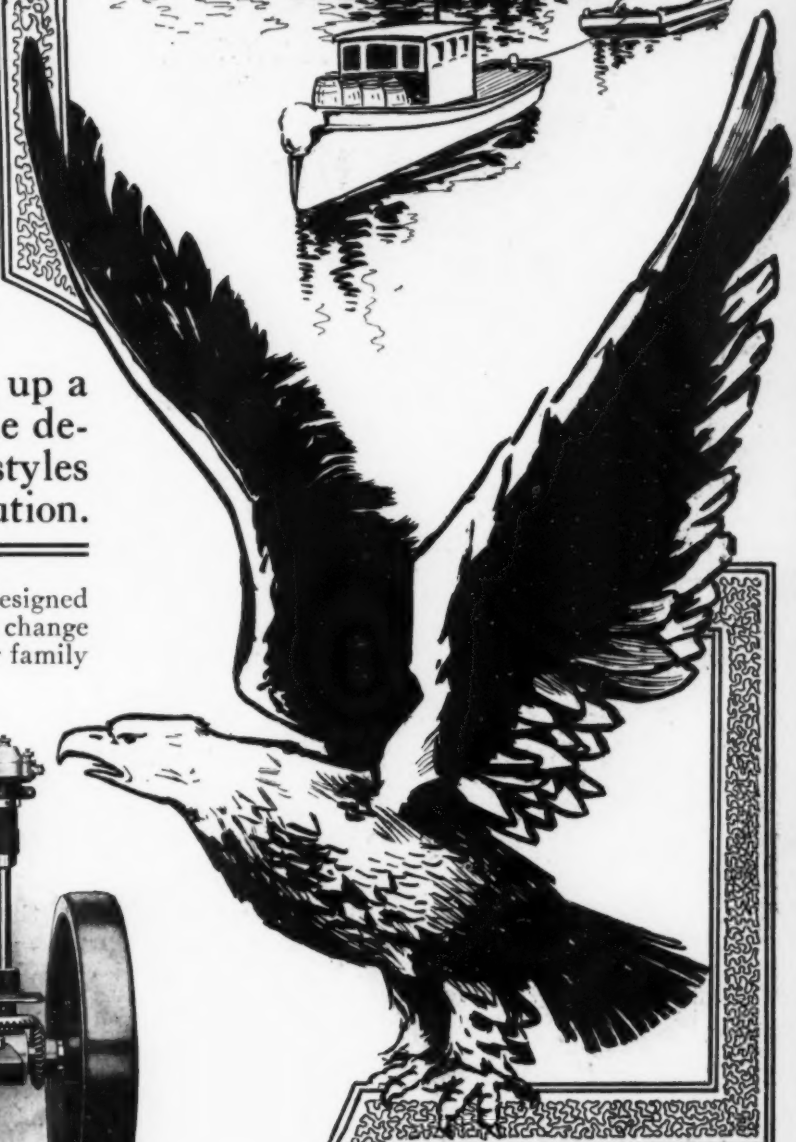
Price, \$95.00

From the description, as noted, you will be impressed with the completeness of the "Eagle" line. It affords you an exceptional opportunity to supply an engine for every purpose. It is the most complete and most standard line of Two Cycle engines offered. It is controlled by one of the greatest business organizations in the country who have engines to deliver when you want and urgently need them.

Your opportunity for "building a business for all time" is here. Are you wise enough to grasp it? Write for our new catalog. Don't delay. There has never been a time in our history when so many requests for representing us have been received. We are looking for the live ones. Write us or talk it over at the New York and Chicago Motor Boat Shows. We will be there with a full line of all models.

AND CHICAGO MOTOR BOAT SHOWS."

Torrington, Conn., U.S.A.



Build Your Busi

Secure the Rig

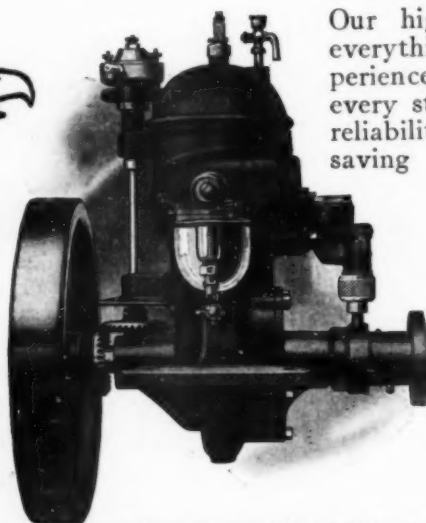
"Eagle" Two Cyc

Become associated with an organization that successful business. Arrange to sell Engines mand will be. Arrange to sell a line of and types for every purpose, an engine for

"Eagle" High Speed Models

4 Sizes

Our high speed engines contain everything demanded by the experienced user of marine engines; every standard of strength, speed, reliability, money saving and worry saving construction, convenience, and design have been provided. No marine engine offered today, at any price, can boast of features that "Eagle" Engines do not have; there are less parts to our high speed models than on any engine known of this type, they are light in weight, and high in power. This line is the one you require for the speed hydroplanes, "V" bottom and Bumble Bee type of boats. They will more than meet expectations and then the price is right.



1914 High Speed Single Cylinder, Model "K," 3 1/2 H.P., Bore 3 1/2—Stroke 3 1/4—Weight 90 lbs.

Completely Equipped

with Schabier carburetor, "Black Eagle" spark plug, roller contact-timer, bronze plunger pump with self-contained check valves, priming cup, grease cups, ball thrust bearings, flange coupling, "Eagle" water-cooled exhaust silencer, wrenches, screw driver, can of cylinder oil, can of grease, two oil cans, lag screws, and instruction book.

Price, \$50.00

Medium Speed Models

8 Sizes

This line of engines was designed to meet the requirements of the conservative class who prefer comfort to speed. The "Eagle" Medium speed models are in great demand. This line of "Eagle" Engines has been sold for several years and are well known for their successful and durable qualities. They

"LOOK FOR US AT THE NEW YORK

THE STANDARD CO.,

ness for All Time

ht to Supply

le Marine Engines

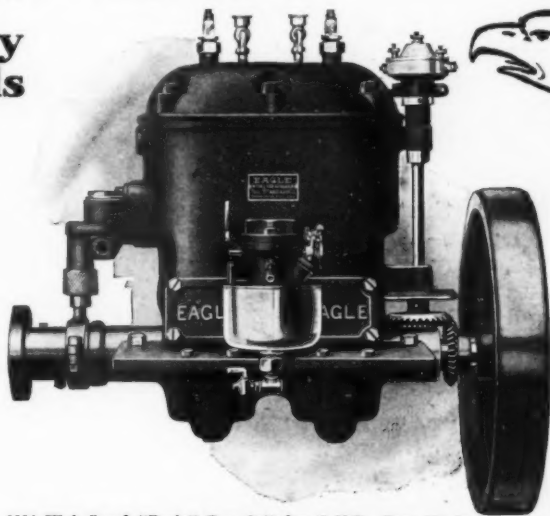
can assist you materially in building up a that the more you sell, the greater the de- engines that is complete, consisting of styles each requirement, and without substitution.

are beautifully finished, and having been properly designed in the beginning, they have never required any radical change in construction. This line is the one you require for family boats, cruisers, and light working outfits.

Real Heavy Duty Models

7 Models

For fourteen years the "Eagle" heavy-duty models have enjoyed such a good reputation that we are free to state that they have no equal as a satisfactory equipment in boats where long life, constant service, and steady work is demanded. Engines of this type are in use in all parts of the world. They enjoy a splendid reputation and prestige, due to the uniform and excellent service they have rendered under all conditions of service. This type of engine is used extensively in open-sea work, and will be found installed in cruisers, heavy work boats, as auxiliary power in catboats, and other sailing craft.



1914 High Speed "Eagle" Two Cylinder, 7 H.P., Bore 3 3/4 in., Stroke 3 1/4 in., Weight 136 lbs.

Completely Equipped

with Schaebler carburetor, "Black Eagle" spark plugs, roller contact-timer, bronze plunger pump with self-contained check valves, priming cup, grease cups, ball thrust bearings, flange coupling, "Eagle" water-cooled exhaust silencer, wrenches, screw driver, can of cylinder oil, can of grease, two oil cans, lag screws and instruction book.

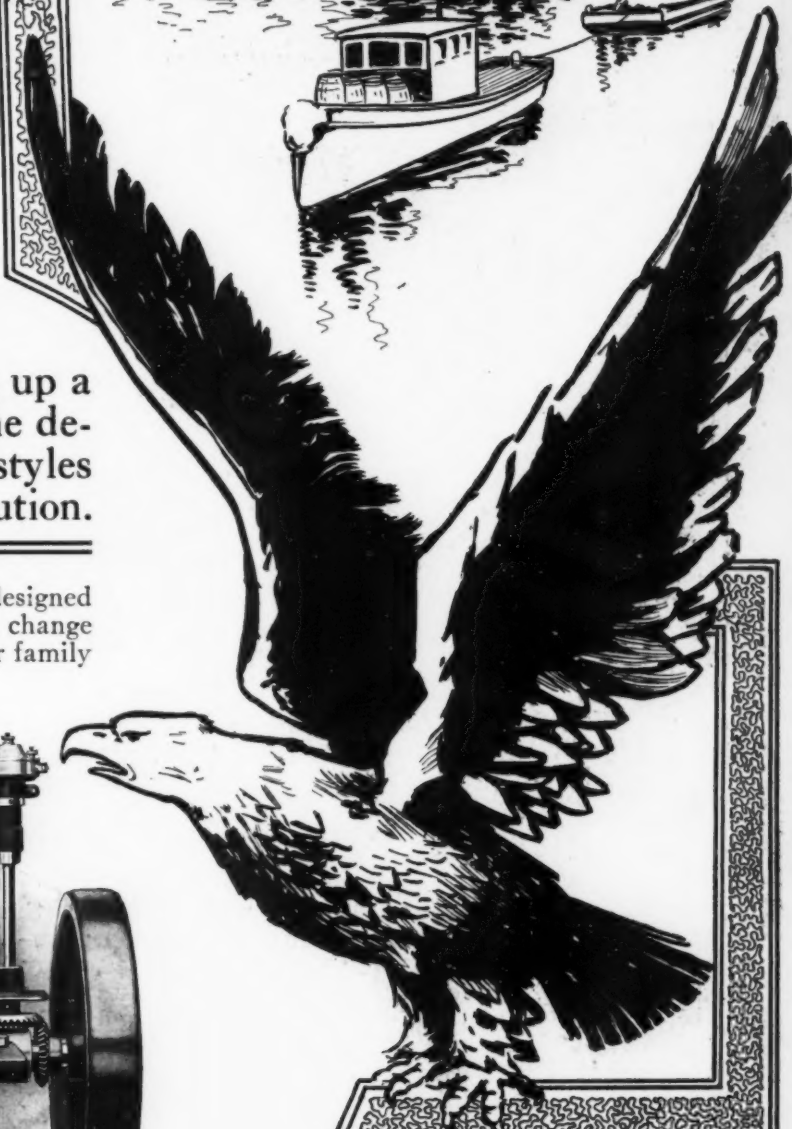
Price, \$95.00

From the description, as noted, you will be impressed with the completeness of the "Eagle" line. It affords you an exceptional opportunity to supply an engine for every purpose. It is the most complete and most standard line of Two Cycle engines offered. It is controlled by one of the greatest business organizations in the country who have engines to deliver when you want and urgently need them.

Your opportunity for "building a business for all time" is here. Are you wise enough to grasp it? Write for our new catalog. Don't delay. There has never been a time in our history when so many requests for representing us have been received. We are looking for the live ones. Write us or talk it over at the New York and Chicago Motor Boat Shows. We will be there with a full line of all models.

AND CHICAGO MOTOR BOAT SHOWS."

Torrington, Conn., U.S.A.



ALL AGREEMENTS AND ORDERS ARE CONTINGENT UPON STRIKES, ACCIDENTS OR OTHER CAUSES BEYOND OUR CONTROL



Van Blerck Motor Co.

MAKERS OF HIGH SPEED AND MEDIUM DUTY
MARINE MOTORS

MONROE MICH

MEMBERS OF NATIONAL ASSOCIATION OF ENGINE AND BOAT MANUFACTURERS

FRIDAY.
Jan. 2nd,
1914.

Mr. Julian Chase, Editor,
Motor Boating,
New York City.

My dear Mr. Chase:-

When the writer took hold of Mr. Van Blerck's proposition August 1st, 1913, he was perfectly amazed at the achievements of this man who, without suitable organization and struggling under the grievous handicap of capital and manufacturing facilities entirely inadequate, had nevertheless produced a motor the design and construction of which had been proven by the fierce test of several successive racing seasons and who was dividing honors and business with the oldest in the marine engine industry.

I could not help but feel that with proper organization, financial resources and an up-to-date plant that Mr. Van Blerck would "Out Do" himself in the production of motors of the highest quality and continue to set the standard in marine engines for power, speed and reliability.

Such facilities have now been provided. The cash paid-in capital of the Van Blerck Motor Company has been increased to meet every requirement of a progressive business. A new plant - the most modern and efficient in the country has been built and put into full operation. Every department, engineering, production, testing, selling and accounting, has been organized with experienced men in charge.

BEST OF ALL, MR. VAN BLERCK WILL HENCEFORTH BE ENABLED TO CONCENTRATE ALL OF HIS TIME AND ATTENTION TO SUPERVISING AND CHECKING EVERY MANUFACTURING AND TESTING OPERATION.

I thank you for this opportunity to bring these facts to your attention and through you to the public. It will be worth your while to watch Van Blercks in 1914.

Very truly yours,

VAN BLERCK MOTOR COMPANY,

Chas. B. Page
V. Pres. & Treas.

C. B. PAGE:
MS.





Look for This Trade Mark on
MONARCH SPAR VARNISH

Retains its original lustre for a greater length of time than any other marine varnish — bar none. Unaffected by heat, cold, weather or atmosphere. Will not blister or crack.

Appearance and durability after long continued exposure are the only true tests of quality for a spar varnish. Any varnish that dries quickly and does not turn white under water cannot possess the required durability for outside marine use. *Monarch Spar Varnish* withstands the test of actual service and has attained its wide use on that basis alone.

GILLESPIE'S MONOLAC

The best varnish made for interior marine work, cabins, woodwork, floors, etc. Furnished in colors and clear.

**MONARCH BULL DOG PAINT
AND VARNISH REMOVER**

The only product which satisfactorily removes old lead, zinc paint, enamel and shellac. Acts almost instantaneously on ordinary work. Does not evaporate readily and cannot burn the hands. More than pays for itself in time saved, to say nothing of the superior results from its use.

Our Treatise on Refinishing Yachts and Motor Boats contains many valuable hints which every boatman will appreciate. Gladly sent gratis anywhere upon request.

*Send four cents postage for free Distance
Finder for use on charts or a gasoline gauge*

Call at Our Demonstrating Booth, No. 19 Concourse, Hudson Terminal Building, New York City, and See a Practical Demonstration of Our Products

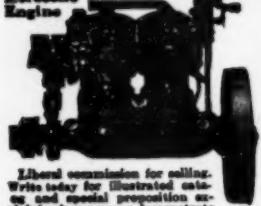
CHAS. H. GILLESPIE & SONS

Established 1824

JERSEY CITY, N. J.

30,000 Detroit Engines Now Using Cheap Kerosene

Every Boatman Wants Detroit Kerosene Engine



Liberal commission for selling. Write today for illustrated catalog and special proposition explaining how you can demonstrate this wonderful engine and secure a special reduction on yours.

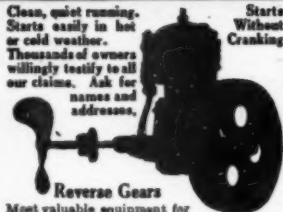
Best and simplest marine engine ever built. Fewest working parts; handy control lever reverse like steam engine; extra-long bearing surfaces ground and polished. Best lubricating system; waterproof ignition; adjustable steel connecting rod; vanadium steel crankshaft. Finest workmanship, best material.

WONDERFUL ECONOMY OF OPERATION
Patent Detroit Fuel Injector does work with pints of cheap kerosene where other engines use a quart and a half of costly gasoline. Gasoline going up—try Detroit Kerosene Marine Engine. No matches—no heater device. Engine makes its power from cold kerosene; also uses distillate and gasoline with greatest economy.

GREATEST MARINE ENGINE BARGAIN EVER OFFERED
Complete line—high, medium and low-speed types—also 2 horsepower to 60 horsepower—in stock, ready to ship. Suitable for pleasure boats, work boats, tow boats, fishing boats, stern and paddle-wheel boats. **Five-Year Guarantee. Thirty-Day Trial.**

DETROIT ENGINE WORKS, (Marine Dept.) 1236 Jefferson Avenue, Detroit, Mich., U. S. A.

Close, quiet running. Starts easily in hot or cold weather. Thousands of owners willingly testify to all our claims. Ask for names and addresses.



Reverse Gears

Most valuable equipment for all motor boat engines; positive; instantaneous; worth twice the money.

LEARY FIVE ENGINE



One to six cylinders—5 to 30 H. P. Leary Gasoline Engine Co., 1535 Dewey Ave., Rochester, N. Y.

Has an extra fourth port also regulated by the travel of the piston. Two carburetors are used, and unlike the one carburetor type of engine, once regulated require no further adjusting. Kerosene piped to one carburetor and gasoline to the other makes an ideal and cheap fuel.

Reliable SIMPLE Inexpensive
Ignition and lighting apparatus our specialty.

Let us know your requirements.

LEBBY ENGINEERING CO., Charleston, S. C.



Lapidowitz is Back on the Job

THE "schnorrer" is up to his old tricks. And the people who used to enjoy his exploits so hugely are happy again. This inimitable type is a part of the Ghetto's teeming life. Nothing in the whole wide world is quite like New York's East Side. In

that temperamental Yiddish community there is rare pathos—rich humor.

**Bruno Lessing
and
Leone Bracker**

Bruno Lessing knows its people and tells about them simply and sincerely. Each story is a delightful sidelight on their serious yet fun-loving natures.

Leone Bracker draws the Bruno Lessing characters with utmost fidelity to detail. This is fiction, but author and artist have made the stories a transcript of real life and the "schnorrer" one of the most humorous, entertaining characters ever originated. Read today how the rich widow wooed Lapidowitz.

Hearst's Magazine
119 West 40th Street, New York City

Three Months for a Quarter.

Simply fill in your name below, tear off and mail this coupon today with 25c, and you will receive a special three months' trial subscription to Hearst's Magazine containing the Bruno Lessing stories and innumerable big fiction and review features.

Name
Street
City.....M. B. 2-14

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

The Only Available SHORE FRONT—16 1/2 ACRES For Sale

In the richest town per capita in the U. S. A.

RIPARIAN GREENWICH, CONN. RIGHTS

Good water depth and channel. 1/2 HR. FROM N. Y. C.

SUITABLE FOR AMUSEMENT PARK, with bathing pavilion restaurant, etc.

BUNGALOW DEVELOPMENT or HOTEL SITE.

LAUNCH or AUTOMOBILE WORKS.

MANUFACTURING PLANT, where shipping by water is essential.

ROCK enough in property for the building of docks, foundations, etc. LAND enough for workmen's homes in connection with manufacturing plant. Trolley on Post Road passes through property. Railroad bounds property on the North and spur easily available for R. R. shipping. VALUE \$45,000—\$12,500 CASH.

W. T. RITCH, Owner, 1123 Broadway, New York

Brokers protected and invited to list.



If you want Good Circulation on your

Automobile, Launch

or Motor Boat, use a

LOBEE PUMP

LOBEE PUMP & MACHINERY CO.

57 Bridge Street, Buffalo, N. Y.

BARGAINS ON NEW ENGINES



The New Economic Motor, 2 cylinder, 3 port type, with full equipment, coil, batteries, switch, grease cups, Monarch Carburetor, etc. 14 and 8 H. P. Best material and workmanship. Special life time guarantee. Complete, \$70. 14 H. P. \$140. One cylinder, 3 H. P. fully equipped, \$42. One cylinder, 7 H. P. fully equipped, \$75. Write today for full information.

J. H. MALLINSON, 7 Cumberland St., ROCHESTER, N. Y.

Mea S R O
MAGNETO BALL BEARING
Sole Importers
MARBURG BROS., Inc., NEW YORK.
Detroit Toronto Chicago



The Polaris Compass

Will Hold You on the Course

Standard Quality and especially adapted for power boats.

Ask about our "Perfect" Compass Light. No eye strain. Costs less than a binocular. And more efficient.

Address Box H.

MARINE COMPASS CO.

Bryantville, Mass.

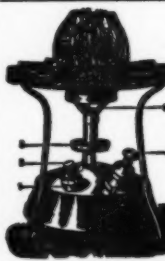
Masten Tops, Spray Hoods, Cushions

HIGHEST grade in design, materials and workmanship with prices lowest for any products of equal quality. Write today for catalog, with prices and full descriptions. Contains valuable information for every prospective buyer.

THEO. H. MASTEN CO.

34 EAST 9th ST.

NEW YORK



BURNS WITHOUT ODOR

Barthel Jewel

Yacht Stove

Generates gas from Kerosene, giving hot, blue flame. Absolutely safe, even if overturned while lit. Has Galvanized Frame with Brass Rail around Top and Pan Beneath for Yacht and Boat use. Several styles.

Write for catalogue and prices.

Be Gas Light Company

Union St. Boston, Mass.

CROCKETT'S Spar Composition

—the original and best known exterior marine varnish in the world. The best Interior Finish is Crockett's

No. 1 Preservative

Send for Catalogue

The David B. Crockett Company Bridgeport, Conn.



AVOID disaster by using a DIRIGO compass on that boat. All materials first class. No rubber gaskets to rot. A very hard pivot and high grade jewel. NAVY DEGREE CIRCLE on dial. Made in seven sizes. Fully guaranteed. Ask your dealer, or sent on approval. Send for catalog.

EUGENE M. SHERMAN

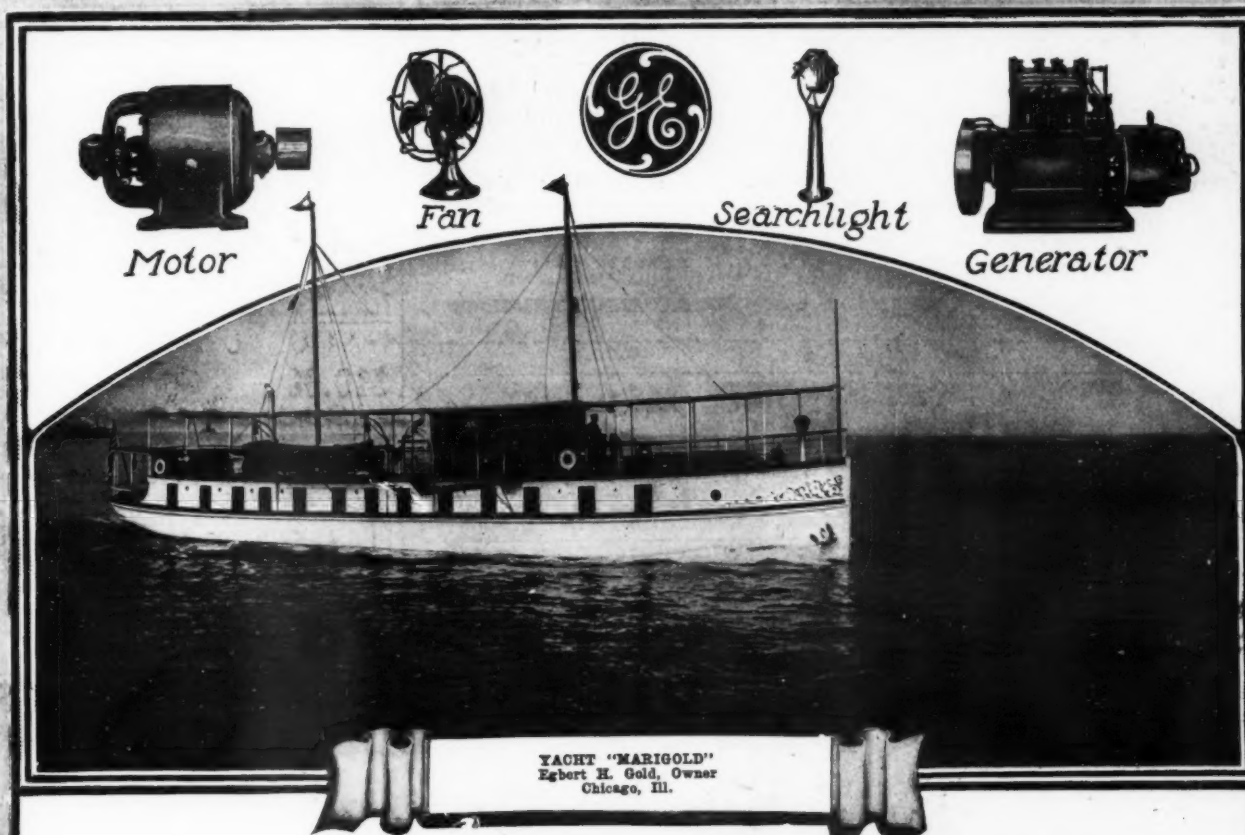
Box 3 Bellevue, Wash.

2 1/2 H. P. ENGINE \$39.50 ABSOLUTELY HIGH GRADE

SEND FOR BOOKLET

DE LONG ENGINE COMPANY

83 North Avenue WEBSTER, NEW YORK



The "Marigold" is equipped with one 5 horse power G-E Gasolene Electric Generator, one CQ Motor for pumping service, a G-E 9-in. marine searchlight, and G-E fans, lamps, etc.

Electric Service on Board Ship

Brilliant illumination: electric heating and cooking devices, electric signals, searchlights and power devices produce greater comfort and safety on board ship.

Edison Mazda Lamps, in all sizes, are especially adapted for lighting any part of the boat.

G-E Electric Fans and electric stateroom heaters provide comforts.

The G-E Marine Searchlight increases the scenic advantages as well as the safety at night.

Electric Cooking and Heating Devices of all kinds can be operated at a cost incomparable with the convenience and simplicity.

Power Motors for the windlass, pumps, etc., can be located conveniently and operated by the turn of a switch.

The Source of Power most economical and convenient for yachts and motor boats is the G-E Gasolene Engine Generator—a thoroughly reliable direct connected unit which operates successfully with minimum attention.

For vessels having steam, the G-E steam engine generator or turbine may be used.

Bulletin No. 4926 explains and illustrates the applications of electricity in Marine Service. Furnished on request.

General Electric Company

Atlanta, Ga.
Baltimore, Md.
Birmingham, Ala.
Boise, Idaho
Boston, Mass.
Buffalo, N. Y.
Butte, Mont.
Charleston, W. Va.
Charlotte, N. C.
Chattanooga, Tenn.
Chicago, Ill.
Cincinnati, Ohio

Cleveland, Ohio
Columbus, Ohio
Davenport, Iowa
Dayton, Ohio
Denver, Col.
Detroit, Mich.
(Office of Agents)
Elmira, N. Y.
Eric, Pa.
Fort Wayne, Ind.
Hartford, Conn.
Indianapolis, Ind.

Largest Electrical Manufacturer in the World.

General Offices: Schenectady, N. Y.

ADDRESS NEAREST OFFICE.

Jacksonville, Fla.
Joplin, Mo.
Kansas City, Mo.
Keokuk, Iowa
Knoxville, Tenn.
Los Angeles, Cal.



Louisville, Ky.
Madison, Wis.
Mattoon, Ill.
Memphis, Tenn.
Milwaukee, Wis.
Minneapolis, Minn.

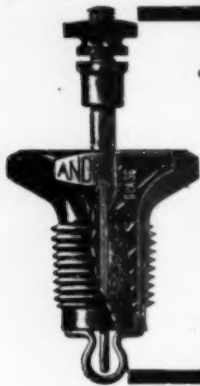
Nashville, Tenn.
New Haven, Conn.
New Orleans, La.
New York, N. Y.
Niagara Falls, N. Y.
Omaha, Neb.
Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Ore.
Providence, R. I.
Richmond, Va.
Rochester, N. Y.

Salt Lake City, Utah
San Francisco, Cal.
St. Louis, Mo.
Schenectady, N. Y.
Seattle, Wash.
Spokane, Wash.
Springfield, Mass.
Syracuse, N. Y.
Toledo, Ohio
Washington, D. C.
Youngstown, Ohio

For Texas, Oklahoma and Arizona business refer to Southwest General Electric Company (formerly Hobson Electric Co.), Dallas, El Paso, Houston and Oklahoma City. For Canadian business refer to Canadian General Electric Company, Ltd., Toronto, Ont.

3949

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.



ANDERSON GLASS AND STEEL SPARK-PLUG

A WINDOW to the Engine

Glass and steel welded into one solid integral body makes the Anderson absolutely the strongest and most enduring plug on the market.

Better pay \$1.50 once than a dollar a dozen times. That's about the ratio of Anderson Spark Plug life, compared with ordinary plugs. ALL SIZES

ANDERSON SPARK PLUG CO. 206 NORTH HOLLIDAY ST. BALTIMORE, MD.

MONITOR



BOAT FRAMES and ENGINES

Send for new
free catalog



MONITOR Boat & Engine Co., Newark, N. J.

"Sacrifice! It's women who sacrifice themselves. Do you suppose any of those men we met last night would sacrifice himself for anything or anybody? Not much—they became rich through robbery and they're in the habit of taking whatever they want."

SPOKEN in pique, but Lorelei was compelled to acknowledge the truth of it. Hadn't she been fighting against the very thing for the last two years? Didn't she know that success came only through men? What a struggle it was to win and not pay the price they asked?

Rex Beach

has made the story of this girl's achievement a fascinating picture of stage life. Beach knows New York better than most of us know our own front door yards.

"The Auction Block"

is a kaleidoscope of Fifth Avenue mansions, Broadway theatres, the thronging, teeming activity of the metropolis. And through it all gleams the high minded purpose, the steadfast resolve of a most beautiful girl. Read the story to day.

Cosmopolitan

119 West 40th St., New York City

Only a Dollar Bill

mailed to us today with this coupon will bring you Rex Beach's master novel in the next eight months of Cosmopolitan. This very special offer is open only to new subscribers. Fill in your name now.

Name.....
Street.....
City..... X. B. 2-14



A. S. Gibson

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

A MOTSINGER CARBURETOR

For those who want the best thing made for the purpose—for those who are through fussing with the cheap stuff and are willing to pay just a little more to get the result they want and be satisfied. Winter and hard starting are here. Write us for full description.

Motsinger Device Mfg. Company

936 First Avenue La Fayette, Ind., U.S.A.



NARRAGANSETT CHEMICAL CO. PROVIDENCE, R. I.

NATIONAL REVERSE GEAR

\$10.00 Guaranteed 5 years against breakage or defects due to defective workmanship or material. Weighs only 30 lbs. Guaranteed to hold up to 6 h. p. at 500 R.P.M. Your money and all freight charges returned if not as represented. At the price you can't afford to run your boat without a National Reverse Gear.

NATIONAL GEAR CO., 1530 Jefferson Avenue, DETROIT, MICH.

REMEDY IGNITION TROUBLES! USE NICHOLSON "COIL" FILES

Specially designed for cleaning and brightening the contact points of Spark plugs, Coils, and Vibrators.

ONE DOZEN FOR TRIAL \$1.50

Complete File Catalog sent FREE on request.

NICHOLSON FILE CO. Providence, R. I.

NICHOALDS 4 CYLINDER MOTORS \$100

THREE CYLINDER RELIANCE MOTOR \$75

Marine Reverse Gears

We always carry a full line of Motor Boat and Automobile Accessories. Write for price list.

NICHOALDS CO., 426 Grand River, Detroit, Mich., U.S.A.

Pearl Revere Clutch

NO GEARS.

ONLY ROLLER BEARINGS and CONES. GRIP INSTANTLY and FIRMLY. BEST REVERSE CLUTCH ON EARTH.

PEARL MACHINE COMPANY

280 West Elizabeth St., Detroit, Mich.

VICTOR PROPELLERS

In standard pitches, for hydro, run-about, cruiser; blades inclined aft 7 degrees; thin, strong, and true screw. Well Balanced. Smooth Surface.

Reid Wheel Co., 378 Bank St., Newark, N. J.

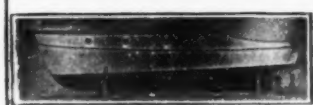
RICE 20-FOOT SPECIAL LAUNCH



\$275.

A \$400. Boat For \$275. If you are going to buy a boat don't fail to get our catalogue. RICE BROTHERS COMPANY, East Boothbay, Maine.

Don't fail to see our 1914 Models—N. Y. Motor Boat Show, Jan. 31—Feb. 7.



36'-6" x 8' V Stern

RICHARDSON

Anything in the boat line K.D. or Complete Write for Estimates on your requirements.

G. R. Richardson SWEENEY ST. No. TONAWANDA N. Y.

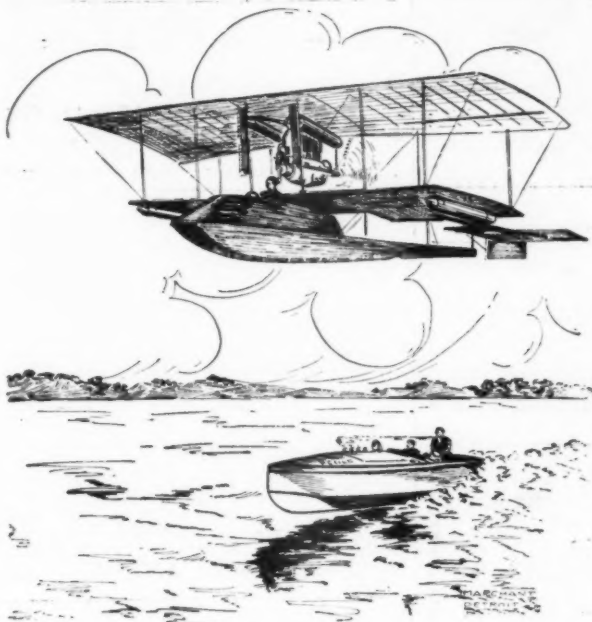
OXFORD Marine Motor Reverse Gear Kennedy Carburetor
L. D. ROBBINS CO., LYNN, MASS.



We have ready for shipment completed hulls, also semi-finished hulls from 14 ft. to 30 ft. We furnish knock-down frames and all parts for any size motor boat. Designers and builders of Launches, Cruisers, Auxiliary Yachts and Tenders. Write for prices and descriptions. ROBBINS BROS., Foot of Bay St., Hamilton, Ont.

MAXIMOTOR

IN A CLASS BY ITSELF



Above cut illustrates MAXI Flying-Boat, operated successfully with a Model "B" 4-cylinder 60-70 H. P. MAXIMOTOR.

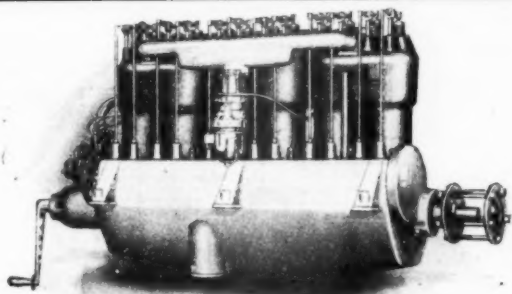
MAXIMOTORS

COMPACT POWERFUL LIGHT

have been especially designed to fill a long-felt want for an ideal, light-weight, high-speed, Power-Plant.

In the make-up of MAXIMOTORS, the makers weighed carefully the most important features that should be incorporated in a high-speed motor.

Neither time nor money have been thought of in the designing of MAXIMOTORS. The only thought in mind was, to produce a Power-Plant to satisfy even the most skeptical Marine or Aeronautic enthusiasts.



Six-cylinder 100 H. P. Weight less than 4 lbs. to the H. P. MAXIMOTORS are built in 6 models from 50 to 150 H. P.

CATALOG on request.

MAXIMOTOR MAKERS

1540 Jefferson Ave. E., Detroit

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.



No Yacht Complete Without One

because the Evinrude Detachable Rowboat and Canoe Motor transforms any dinghy or life boat into an efficient motor boat in less than one minute. Why rely upon oars when you can procure speed and comfort so easily? No matter what depth or angle of stern your boat is, the



will fit it; when not in use it may be hung up in the cabin or stowed away in a convenient place. Weighing about 50 pounds, the weight is of no consequence, and the motor may be carried about like a satchel, if desired.

The 1914 Evinrude

is equipped with a built-in reversible magneto one that is not affected by rain, waves or even complete submersion. But this is only one of the many exclusive Evinrude features which are explained in our catalog.

There are many shallows and other places where a motor boat cannot go; there are many motor boats which women and children cannot operate: this is why the Evinrude offers a triumphant remedy, for it goes everywhere and operates so simply that it opens the pleasures of motor boating to everyone. It drives a rowboat 8 miles an hour—a canoe nearly 12. See the Evinrude at your Hardware or Sporting Goods Dealer's, or write for free illustrated catalog.

EVINRUDE MOTOR COMPANY

136 T Street, Milwaukee, Wis.

BRANCH OFFICES

San Francisco, 423 Market St. Portland, Ore., 106 Fourth St.
New York City, 89 Cortlandt St. Boston, 218 State St.
Jacksonville, Fla., Ft. of Main St.



Non-Sinkable
Non-Leakable
Non-Rustable

Magnificent Steel Launch



Stylish 16-Footer Fully Equipped
with Engine Ready to Run!

\$96

1914 models of the Michigan Steel Launch are now ready for delivery at the lowest prices quoted on boats anywhere. Our special low price schedule for immediate orders covers every launch we make—16, 18, 20, 23 and 27-footers. All sizes in stock for immediate shipment. We are the sole owners of patents covering rolled-steel constructed boats. This construction lasts practically a lifetime. We have the only construction

that has successfully made the terrific trip through Grand Canyons of Colorado and Arizona. Write for booklet describing trip. Gold medals awarded our Boats and Engines by Royal Imperial Tech. Soc., St. Petersburg; Internat'l Exposition, Milan; Nat'l Motor Boat Show, Paris.

Equipped Bow and Stern with Air-Tight Compartments. The Non-Sinkable Boat—Absolutely Safe! Needs No Boathouse. Leave your Michigan Launch in the water or out on the beach in all kinds of weather for months. It is puncture-proof. Equipped with the wonderful Detroit Engine, guaranteed for 80 years, any horse-power from 2 to 10. Fewest moving parts of any engine made. Anyone can run it. Free fully illustrated catalog shows all 1914 models. Don't buy a launch until you see this book. Write for special proposition and prices to Demonstrator Agents. STEEL BOATWORKS, 220. Need no boathouse. Big money in boat livery. MICHIGAN STEEL BOAT COMPANY, 1236 Jefferson Avenue, Detroit, Michigan, U. S. A. (162)

BREAZNELL SPARK PLUG AND TERMINAL CLIPS



Insure Perfect Connections, Permanently Trouble-Proof. Vibration cannot loosen them. Applied without removing thumb nut. Best connectors ever designed.

Breaznell Battery Clips for Dry Cells, increase efficiency by giving perfect contact always. 60c. Dozen C. O. D. Parcels Post 30c. Half Dozen

Order to-day. C. O. D.—no risk. Special rates to dealers and jobbers.

J. H. BREAZNELL 26 Court Street, Brooklyn, N. Y. ASK YOUR DEALER. PATENTED IN CANADA 1913. U. S. PATENT PENDING.



Emmeline Pankhurst's Life Story

is an intimate, personal account of the militant movement told by the intense, human, misunderstood Mrs. Pankhurst herself.

This is the first really authentic article of the vast number that have been written on woman suffrage. Those who have as yet not heard the facts will be able to pick out the truth of the matter.

It is a general's story penned while the conflict is still raging. Millions will want it. You will want it—for inspiration, for light, for fair play.

Whether or not you believe in militancy, whether or not you believe in suffrage, you should read Mrs. Pankhurst's life story. You believe in woman at least.

Send the coupon opposite with a quarter and get this leader's autobiography in the next three months of

Good Housekeeping Magazine

119 West 40th St., New York City

Tear off and Mail this Coupon Today
GOOD HOUSEKEEPING, 119 West 40th Street, New York City. Gentlemen—My wife wants to read Mrs. Pankhurst's "Life Story" for a winter evening. The full color portrait which will be in the next issue of the magazine is just what she needs. Please send me the magazine for one month. I will pay the regular rate of 10 cents.

Name.....
Street.....
City.....
State.....
Zip.....

HALL ENGINES

We have Engineed many of the Most World Famous Ocean Cruisers.

4 CUPS OUT OF 5—THE GREAT HAVANA RACE

2 OUT OF 3—BERMUDA RACE, 1909

Four Cyls, 6 to 250 H. P. Heavy Duty.

HALL GAS ENGINE CO. BRIDGESBURG PHILA. PA.

HARRIS OILS

"A Little Goes a Long Way and Every Drop Counts"

A. W. HARRIS OIL CO.

836 E. Water St., Providence, R. I.

143 So. Wabash Ave., Chicago, Ill.



Henke Marine Bronze

We send in preference to all others the "motor boat" brand on its trip from Detroit to St. Petersburg, simply on merits.

The bottom paint that cannot foul up. Guaranteed absolutely. Send for booklet and color card.

HENKE MANUFACTURING CO. NEW YORK CITY

CAMERAS and Camera Supplies

Catalogue Free

Herbert & Huesgen Co.

311 Madison Ave.

Room 16 New York City

HOWARD CRUISER \$850.00

The greatest value ever offered for \$850.00. A high grade 27 ft. cruiser, with cypress planking, copper fastened, white oak frame, etc. Best quality throughout. Sturdy enough for any sea. High grade 10 H. P. 4 cycle engine. Complete in all details. Also furnished K. D. or complete without engine. Write today for catalog.

HOWARD CRUISER WORKS, Westfield, N. Y.

BAYARD HOPKINS, M'Y'r

248 West 23d Street New York

Let us estimate on your

Boat Covers Spray Hoods

Yacht Flags Awnings

Cushions and Canvas work of all kinds.

Prices Low for Best Work.

J E N C I C K QUALITY COUNTS

Quality of Design Quality of Material

Quality of Workmanship Quality of Service

We build heavy duty Motors from 15 to 75 H. P.

WRITE FOR BOOKLET

"J E N C I C K"

Port Chester N. Y.



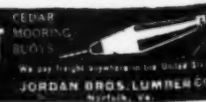
JEWEL Open Window Storage Battery

Look inside your battery through the patented open window. See condition of plates and height of acid. Jewel Special 6-60, \$9. 6-90, \$13. 6-100, \$16. 6-100 Starting Battery, \$18.

Jewel Detachable Electric Rowboat Motor, attaches to any rowboat or canoe, runs on 2 six-volt batteries. Complete without batteries, \$18. Write for Catalog. Business Established 1896

JEWEL ELECTRIC CO., Dept. B, 1409 N. Michigan Ave., CHICAGO

Cedar Lumber



ANY QUANTITY ANYWHERE AT ONCE

JORDAN BROS. LUMBER CO. BOSTON, MASS.

KOVEN GASOLINE TANKS

For Gasoline. Air for Whistles, Oil, Water, Mufflers, Condensers, etc. Heavy sheet iron and plate steel work of any shape desired. Galvanizing of all kinds of boat work.

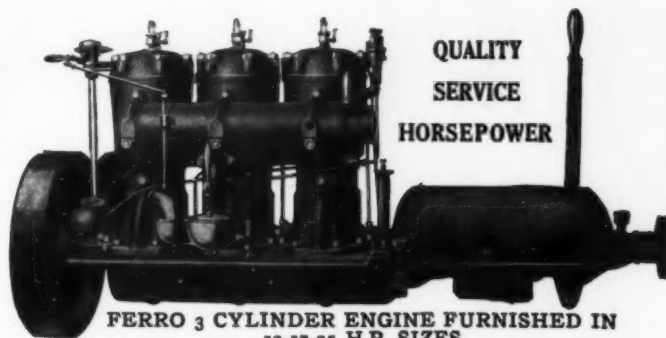
L. O. KOVEN & BRO. 52 CLIFF STREET NEW YORK CITY

MARINE PAINTS AND SPECIALTIES

Elastic Seam—Compositions; Elastic Flat Yacht White; Elastic Gloss Yacht White; Elastic Special Bright Green Copper Paint; Elastic Special Bright Red Copper Paint and Elastic Bright Green Bottoming. Send for list of firms carrying our goods and for catalogue to

H. B. FRED KUHL, Sole Manufacturer Office and Works: 3rd Ave. & 23d St., Brooklyn, N. Y. U. S. A.

FERRO LOGIC



FERRO 3 CYLINDER ENGINE FURNISHED IN
12-17-25 H.P. SIZES

MR. ENGINE BUYER:

What are the three most vital points to be investigated before buying a Marine Engine?

YOUR ANSWER SHOULD BE:

1st QUALITY—Because

{ QUALITY in a Marine Engine represents the grade of material and workmanship from which the engine is built.

2nd SERVICE—Because

{ SERVICE in a Marine Engine means Usefulness, Readiness to Serve, Promptness and Constancy in Action.

3rd HORSEPOWER—Because

{ HORSEPOWER in a Marine Engine is the amount of energy created to be applied to the propeller wheel for work.

Therefore a Marine Engine built of the Highest Grade Material by skilled workmen, always ready to run and delivering maximum horsepower in proportion to fuel consumed, should be your logical choice.

Your investigation is solicited, and each individual Ferro Engine in itself is an example of the highest type in the combination of the three vital points—QUALITY, SERVICE and HORSEPOWER.

Look for us at the New York and Chicago Motor Boat Shows. We are exhibiting a full line of 1914 Stock Engines.

The Ferro Marine Engine is built in eleven sizes—3 to 25 H. P.—\$60 to \$500

Send for Illustrated Catalog

THE FERRO MACHINE & FOUNDRY CO.

Main Office and Plant, 36 Hubbard Avenue and East 66th Street, Cleveland, Ohio, U. S. A.

Ferro Dealers in all principal cities and towns.

New York Distributor—The Consolidated Gas & Gasoline Engine Co., 202 Fulton Street

Er

The Climax

of Sixteen Years of Successful Motor Building

The New ERD Four Cycle

25 H. P., Four Cylinder En Bloc, Complete Unit Power Plant

Our sixteen years of successful experience, backed by one of the finest factory equipments in the country, enables us to produce this motor at a price you cannot equal for the size and quality. We have followed automobile practice by building it in quantities with special tools, jigs and automatic machinery, insuring perfect workmanship, perfect interchangeability and the greatest economy of manufacture.

This is the engine that will give you the greatest satisfaction in your new boat. Just the right size to prove most efficient and economical in the average boat, including small cruisers; controls like an automobile engine.

It is strictly designed to stand the gaff in your boat—to give you perfect service at all times—to run with the throttle wide open one hour or one hundred hours without damage to the motor. To accomplish this result successfully, it is important that the exhaust manifold is thoroughly water-cooled as well as the cylinder walls. Without this water-jacketed exhaust manifold, a motor placed under a hood would be a very unsafe proposition in any boat.

You'll find this motor just right at every point. Go over every detail carefully. Go to our nearest dealer and examine it. Don't class it according to price, but rate it for its quality, then try to match it at the price if you can.

SPECIFICATIONS

1. Four cylinders, cast en bloc.
2. Bore 4 in., stroke 5 in., 25 H. P.
3. Dual ignition, magneto.
4. All moving parts enclosed.
5. Positive circulating oil pump.
6. Crank shaft, drop forged, 1 7/8".
7. Special reverse gear on extended base.
8. All bearings interchangeable.
9. Oil retaining washers on shaft.
10. Wide foundation lugs allowing engine bed timbers to run past flywheel.
11. Intake gas gets the benefit of the exhaust heat, which allows the use of low-grade gasoline.

And Best of All--

THE PRICES

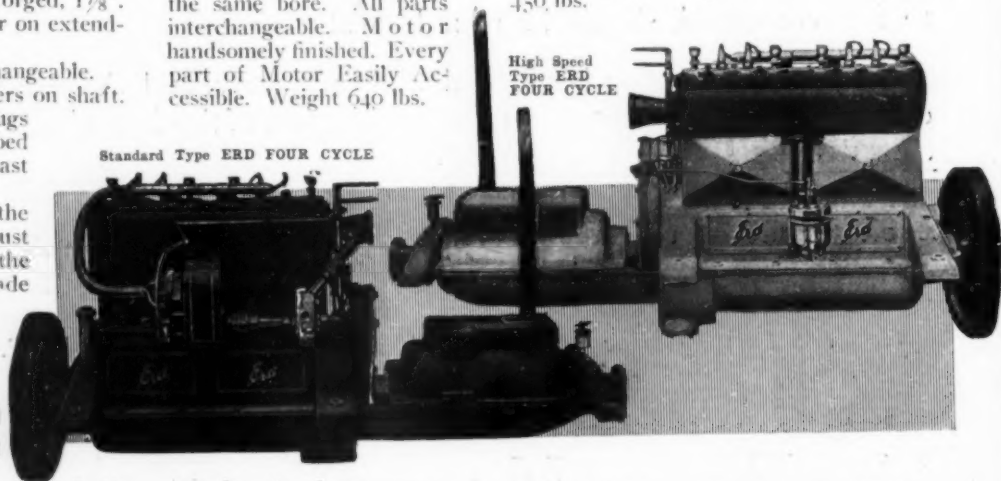
Standard Type, \$385.00

High Speed Type, 425.00

Here Are a Few of the Advanced Features:

Perfect control when running idle or with full load. No Vibration. Easy Starting. Bearings larger than those of any other motor of the same bore. All parts interchangeable. Motor handsomely finished. Every part of Motor Easily Accessible. Weight 640 lbs.

The High Speed Motor is equipped with Aluminum crank-case, base, clutch cover, hand-hole plates and water cover. Especially adapted for hydroplanes or wherever motor is placed forward. Weight 450 lbs.



Write today for an attractive catalog describing this motor in detail. If interested in smaller power or feather-weight racing machines, ask for 2-cycle catalog

ERD MOTOR COMPANY

SAGINAW, W. S.
MICHIGAN, U. S. A.

HENRY MORGAN & CO., Ltd., Montreal, Que.: Eastern Canadian Distributors

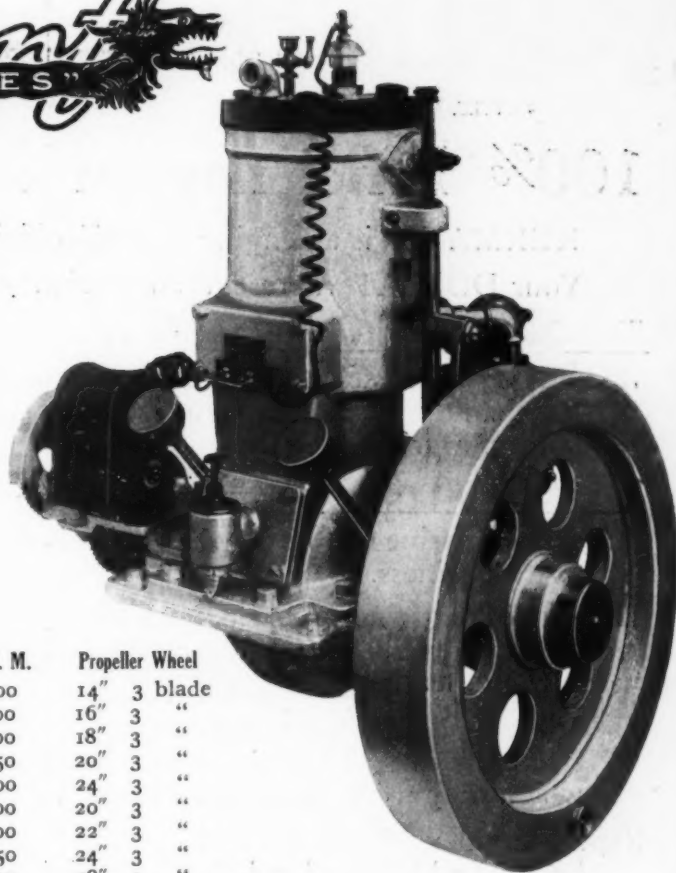
ALBERT E. ELDRIDGE CORPORATION, New York City: Eastern Distributors

GAS POWER & SUPPLY CO., Portland, Ore.: Western Distributors



1914 Announcement

Our regular line of heavy duty non-backfiring motors which were so immensely successful in 1913, will be continued, both in **gasoline** and **kerosene** types. The numerous valuable features which have been exclusive in the Bridgeport, will be maintained. Both the gasoline and the kerosene models of heavy duty type, will be furnished in the following sizes:



Model		H. P.	bore	stroke	R. P. M.	Propeller Wheel
30	Single Cylinder	2½	3⅝"	4"	500	14" 3 blade
40	"	4	4½"	5"	500	16" 3 "
50	"	5	5¼"	5"	500	18" 3 "
70	"	7	5½"	6"	450	20" 3 "
90	"	9	6½"	6½"	400	24" 3 "
80	Two	8	4½"	5"	500	20" 3 "
100	"	10	5¼"	5"	500	22" 3 "
140	"	14	5½"	6"	450	24" 3 "
180	"	18	6½"	7"	400	28" 3 "
270	Three	27	6½"	7"	400	34" 3 "

The above models, except Model 270, are built with make and break ignition, and equipped with "built-in" low tension magneto with positive gear drive. This is a positive weather-proof system independent of batteries or spark coil. No batteries required for starting. One wire only is required, leading from magneto, through switch to spark-plug. See cut. Model 270 is equipped with high tension "built-in" ignition.

SPECIAL HIGH POWER MODELS—We have developed four high power models to operate at faster propeller speed than our heavy duty motors. These are intended for those having easy driving boats capable of more than average speed. These will embody our perfected three-port system and Bridgeport Vapor Rectifier preventing backfiring, in fact, all of the constructional features which have made our regular models famous. They will be furnished in the following sizes:

Model		H. P.	bore	stroke	R. P. M.	Propeller Wheel
R-1	Single Cylinder	8	4½"	5"	7-800	18"
R-2	Two	16	4½"	5"	7-800	22"
S-1	Single	11	5¼"	5¼"	7-800	20"
S-2	Two	22	5¼"	5¼"	7-800	24"

Above models will also be fitted with "built-in" low tension magneto.

A full line of Bridgeport non-backfiring motors will be on exhibition at our booth at the New York Motor Boat Show, January 31st to February 7th.

THE BRIDGEPORT MOTOR CO., Inc.
BRIDGEPORT, CONN.

AMERICA'S STANDARD 12-H.P. MARINE MOTOR

KERMATH

4 CYCLE, 4 CYLINDER

\$225.00 With Dual
Magneto, 12 H. P.

100% Efficiency in Dollars and Motors

KERMATH is an engine of 100% efficiency.

Your DOLLAR represents an efficiency of 100% when you buy a KERMATH

The Question is Often Asked

WHY is it you can sell a 12 horse power motor of the highest grade for about 40 per cent. less than the average price of the ten leading four cycle engines of the same rated horse power?

The Answer is Easy

Builders of marine motors have spent years of costly experimentation in the early stages of the business.

They have bought new tools and machinery one year only to send them to the junk heap the next year, because of the evolutions which put their machinery and tools out of date and service.

They have paid heavily for their experience in other ways—notably in the loss of expensive parts carried in stock, which have become obsolete, and the patterns, dies, etc., which they were compelled to send to the scrap heap.

Experimental work on many lines, most of which was profitless as well as costly, brought added overhead charges *which had to be incorporated in the selling price of the engine.* And all these were paid by the purchaser.

None of these costs enter into the selling price of the Kermath. The Kermath is a finished product, made by men who got their experience before they built their factory. IT STARTED BUSINESS WITH A CLEAN SLATE

Competent judges say that at least 40 per cent. of the price of the average marine engine is made up from charges arising from faulty designs, discarded models, tools and machinery, costly experimentation—a tax which the evolution of shop and commercial practice put on the business before it became standardized.

Suppose we put it in this fashion:

Engine manufacture, including sales cost and profit. . . .	60 per cent.
Experimental losses as above.	40 per cent.
	100 per cent.

The Kermath Company came into the field fully equipped with the practical experience which represents 40% of the average marine engine cost.

That is why the Kermath Company can sell their engine at 40% to 50% less than the other high grade four cycle motors, and make money.

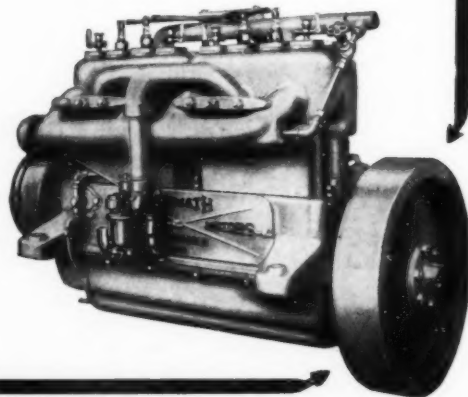
And that is what we mean when we say a dollar exerts an efficiency of 100% when used in the purchase of a *Kermath*.

But the efficiency of the motor itself is of even greater importance than that of the dollar. *Kermath* is an engine of 100% efficiency.

Don't take our word for it. Ask any *Kermath* owner. Or better still, put a *Kermath* in your own boat and find out for yourself.

*Kermath Dealers are in all of the principal cities in the world.
Name of your nearest dealer and catalogue on request*

Kermath Mfg. Co., Department 2 **Detroit, Mich., U. S. A.**





B. & W. GEARLESS REVERSE

Equip Your Boat With This Troubleproof Reverse

Every motor boat, from the smallest runabout to the largest cruiser, should have a reliable reversing mechanism. Perhaps it has been because of the faults of existing types that so many boatmen have tried to get along without a reverse gear.

The B. & W. Gearless Reverse is the very acme of convenience and freedom from trouble. Where ordinary gears are often heavy, noisy and cumbersome, the B. & W. Gearless Reverse is light, quiet, compact, durable and easy to operate.

You can throw the lever from full speed ahead to full speed astern without danger of chipping or breaking any gear teeth. *The reverse speed is the same as the direct drive.* The drive is as positive as a geared mechanism, because it is designed for the power and weight of your boat.

The simplicity of the B. & W. Reverse is its greatest advantage. There is no complicated mechanism to wear out and difficult machine work or assembly to make the price exorbitant. This gear is within reach of every boat owner.

Write today for full information.

**Universal Manufacturing
Co.**

Racine

Wisconsin



⌘ Improved Deck Light and Ventilator

A combination that admits air and light into the engine room, or cabin, without the necessity of going on deck. Cannot be opened from the outside; when closed is flush with deck. No key required; two lugs on the underside; can be unscrewed at will. Furnished in brass or galvanized iron hood ventilator, or separately without ventilator. Can be used as a port light on side of hull or deck house.



Dealers have ⌘ Improved Deck Light and Ventilator or can get it. Write us for full particulars.

**WILCOX, CRITTENDEN
& CO., Inc.**

4 So. Main Street

MIDDLETOWN, CONN.

*Sole Manufacturers of the
Maxim Marine Silencer*

*World's Largest Manufacturers of
Marine Hardware*

Write for descriptive literature

Send three two-cent stamps for first-class Course Protractor

LA Motors Direct from Factory to You

Sold on their Merits

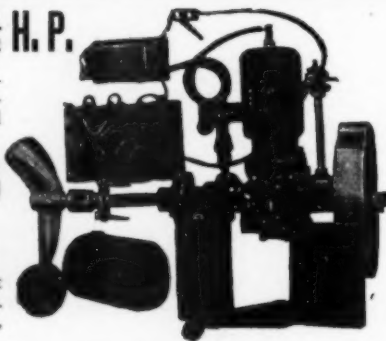
Complete; 1½ H. P.

as shown, including ignition system, shaft and propeller.

\$36.25

Freight Paid

to any point east of the Rockies. West of Rockies, \$39.75.



—the more you compare—the better for us. Just write on a post card "Show me." We'll put the evidence in your hands, including our beautiful new and complete 1913 catalog, giving all details and prices in plain figures. Write that card TODAY.

LOCKWOOD ASH MOTOR CO., 202 Horton St., Jackson, Mich.

Can you tell a good motor in a month's test? Why pay an agent to persuade you that his motor is the best?

Try a Lockwood Ash Motor on thirty days' free trial. Install it in your boat—try it under all conditions—THEN if you are not perfectly satisfied with it, send it back and get your money.

Save A Season's Gasoline Cost

Lockwood Ash Motors are now sold direct to you. You save 33⅓% at the very least—enough to keep any of our highly efficient motors in gasoline for a whole season.

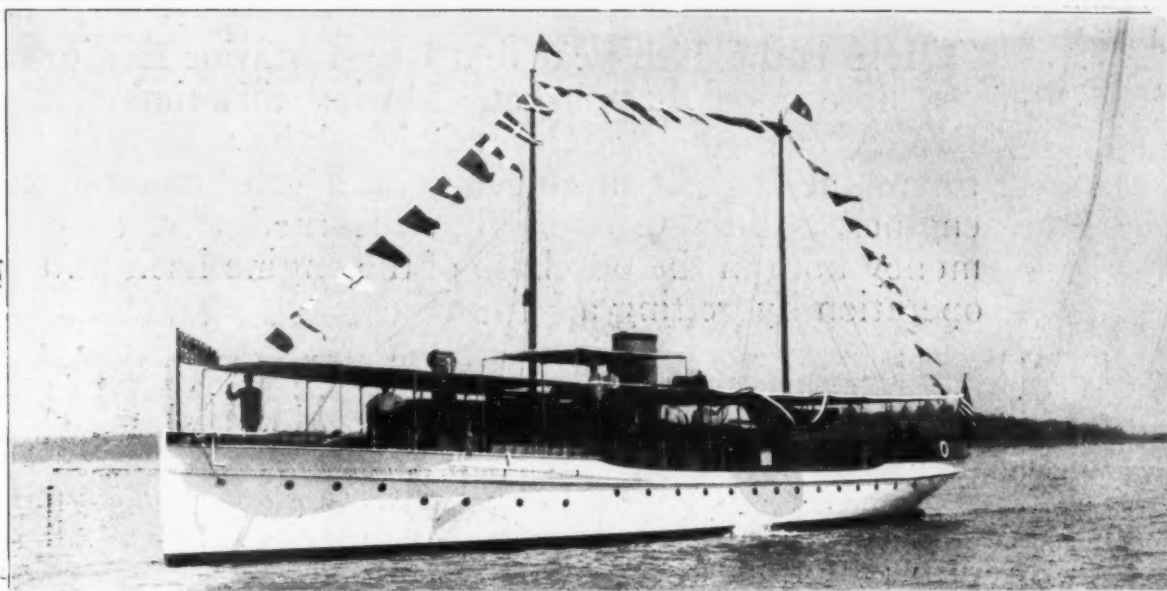
For every purpose, there's an L-A Motor—each built on honor, sold on its merits under a 30-day trial, and subject to a year's guarantee.

YOU ARE FROM MISSOURI—We'll Show You

Our business depends upon our proving facts. The more you investigate

A 30 day Trial-A Years Guarantee

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.



CLARINDA, a 33' x 17' x 5' 6" Motor Cruising Yacht. Designed and built by the Matthews Boat Company. Owned by A. L. Stephens. An able sea boat, capable of 15 miles per hour. Beautiful finish and exceptionally complete equipment. Two 150 H.P. CRAIG motors installed.

Matthews Cruisers will be found distinctively different than no just comparison can be made with those of other build. Attention to detail, completeness of appointment, and perfect construction are a few points of superiority. No more expert supervision is possible in any plant.

The customer's interests are safeguarded to the greatest degree,

due to the fact that all details of construction and equipment are designed and built in our own plant, excepting the motive power.

The Matthews Boat Company is absolutely responsible for satisfactory results in both design and construction, and guarantees perfect service upon delivery of boat. No expense is spared after delivery of a motor cruising yacht to make the customer a thoroughly satisfied customer. Think it over!

MEET US AT THE NATIONAL MOTOR BOAT SHOWS

THE MATTHEWS BOAT COMPANY, PORT CLINTON, OHIO

BUILDERS AND DESIGNERS OF THE WORLD'S FINEST PLEASURE CRAFT

MATTHEWS
CRAFT



BE GUIDED BY THE VERDICT OF THOSE THAT KNOW

WHAT THE SHIPYARDS ARE SAYING:

We have used during 1913 and still are using Chicago Varnish Co.'s marine line. We like Navalite for shipyard work, for we can get it out of the way. That means dust proof and rain proof, as quick as the quickest drying varnish on the market. It is much the easiest flowing, does not skin over or gum the brushes and has that long lasting luster. Cabinoleum, Supreme Yacht White and Supreme Yacht Black have no equal.

SIGNED:

Greenport Basin & Construction Co., Greenport, N. Y.
George Lawley & Son, Inc., Neponset, Mass.
Newport Shipyard, Newport, R. I.
Camden Shipyard & Const. Co., Camden, Maine.

Fyfe & Hittorff Shipyard, Glenwood, L. I.
Tuthill & Thorn, Greenport, N. Y.
Burgess Co. & Curtis, Marblehead, Mass.
B. J. Southall, Miami, Fla.

Mathis Yacht Building Co., Camden, N. J.
Palmer Boat Co., Lake Geneva, Wis.
Weckler Boat Co., Chicago, Ill.

The Start at Larchmont --Race of 50-Footers

Every yacht in this great race was finished with materials made by the Chicago Varnish Co.

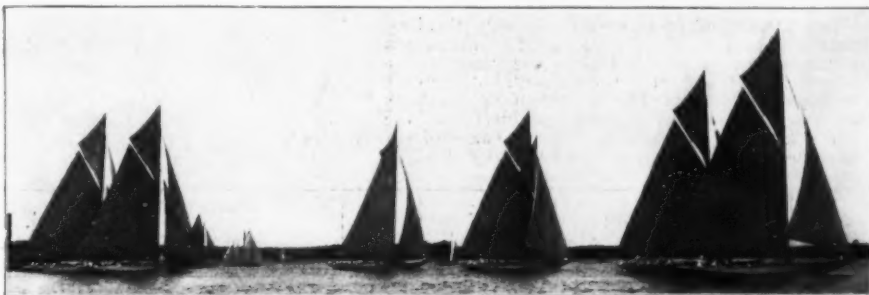
NOTHING ELSE WAS USED

Glenwood Shipyard, Long Island, N. Y.
Jan. 4th, '13.

CHICAGO VARNISH CO., Chicago, Ill.

Dear Sirs—The New York Yacht Club 50-foot racing class of 1913 were all finished with Supreme Yacht White, Cabinoleum and Navalite. Nothing else was used. Respectfully,

(Signed) FYFE & HITTORFF.



Edwin Levick Photo, N. Y.

We submit the following list of Masters of Yachts, best known abroad, who have used Chicago Varnish Co.'s Marine Line for the season of 1913. We have tripled our output in New York and Boston, and have increased more than 100% our sales all over the country since last year. Names of Captains who have used it and recommend it:

John Bond..... Steam Yacht Columbia	E. Pagel..... Aux'l Yacht Atlantic	James Loersch... Schnr. Yacht Endymion	E. Sherlock..... Steam Yacht Isis
A. C. Berton..... " " Iolanda	C. Hanscomb..... " " Wild Duck	F. L. Iverson... Steam " Alvina	Captain Lake... " " Vergemere
J. H. Crawford... " " Utowana	C. W. Scott..... Steam " Aphrodite	G. W. Maskell... " " " "	P. Netland..... " " Ituna
W. P. Porter..... " " Corsair	G. Potter..... " " Rheclair	L. Miller..... " " " "	N. Ferguson... " " Sultana
A. Johnson..... " " Winch'ter	P. Benzanson... " " Aloha	R. W. Sheldrake. Steam Yacht Speedwell	Captain Todd... " " Atlanta
B. Dungan..... " " Noma	H. Dixon..... " " Virginia	J. Gabrielson... " " Niagara	W. L. McLaen.. " " Warrior
W. Lewis..... " " O-we-ra	T. Farrington... " " Vanadis	A. Corkum..... " " Cypress	

Yachts sailing in all parts of the world in all climates.

WE POSITIVELY GUARANTEE NAVALITE NOT TO TURN WHITE IN EITHER FRESH OR SALT WATER. Send for illustrated booklet.

CHICAGO VARNISH CO.

CHICAGO

NEW YORK

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.



THIS is the 14th year that Regal Marine Engines have been upon the market. During this time the name REGAL and the Regal Trade Mark have become to represent the highest in efficiency and value among marine engines. Our customers have learned that they saved money both in the purchase of the engine itself and in its operation by getting a

REGAL ENGINE

Where the lowest operation cost is desired we recommend

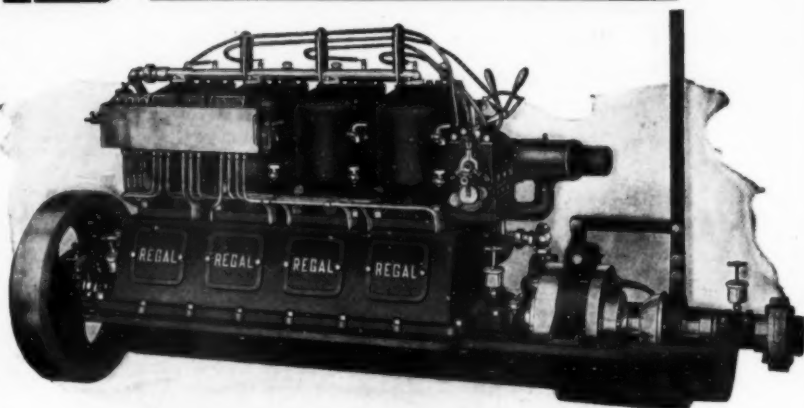
REGAL KEROSENE ENGINES

One of our customers writes that by installing a Regal Kerosene Engine they have reduced their operating cost to $\frac{1}{4}$ of what it was when operating in the same boat a standard make of two cycle engine.

Write for catalog

REGAL GASOLINE ENGINE CO.

74 W. Pearl Street COLDWATER, MICH.



24 h. p. Medium Duty Engine.

To Prevent Hot Bearings, Leaky Stuffing Boxes or Binding of Shaft Due to Distortion of the Hull SPECIFY FRANCKE FLEXIBLE COUPLING

WHEN YOU BUY AN ENGINE, OR HAVE YOUR OLD ENGINE EQUIPPED WITH ONE

Takes Care of Thrust

When going "ahead" the thrust is transmitted by the propeller shaft, through the central bolt, without putting any strain on the flexible pins. When going "astern" the central bolt takes the pull of the propeller.



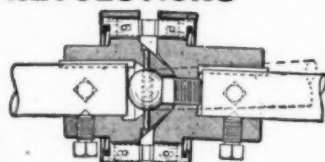
Saves Realigning the Engine

When the engine turns over easily with the boat ashore and hard after the boat is put in the water, a slight distortion of the hull is the cause and a realignment of the shaft is the remedy, but the cure is not permanent, for the distortion comes back when the boat is running and keeps increasing the faster she runs. This distortion is the cause of slower speed, hot engine and reverse gear bearings and leaky stuffing boxes, and the only permanent cure is a flexible coupling.



CURES ALL MISALIGNMENT TROUBLE SAVES LOSS OF SPEED OR POWER GIVES MORE REVOLUTIONS

Cruisers Small Boats
Tow Boats Tenders
Hydroplanes Yachts
No Extra Thrust Bearing
No Leaky Stuffing Boxes
Easier to Install Engines



Don't Be Rigid!

SMITH-SERRELL CO., Inc.
General Sales Agent for
THE FRANCKE CO.
West Street Building, New York

In ordering, give shaft sizes and keyways at both ends, horse-power and revolutions. At your dealer's or direct from

Francke Flexible Couplings are made for any size engine at any speed. TO SELECT YOUR SIZE, select the smallest coupling which will take your largest shaft end. Then check from horse-power table to see that coupling has power enough for your engine. If not enough power—take a larger coupling covering the power.

Also 5 Sizes of Lightweight Steel Hydroplane Couplings.

Size No.	Either end can be any size between these limits	Other end can be any size between these limits	Out. Dia.	Length Over All	HORSE POWER THE COUPLING WILL CARRY AT VARIOUS REVOLUTIONS								Net price F.O.B. New Brunswick, N. J.
					300	400	500	600	700	800	900	1000	
3½	¾ to ⅞	UP to ⅞	3½	5½	3	4	5	6	7	8	9	10	\$6.75
3½A	¾ to ⅞	UP to ⅞	3½	5½	4	5⅓	6⅔	8	9⅓	10⅔	12	13⅓	8.10
4	1 to 1¼	UP to 1¼	4	6	6	8	10	12	14	16	18	20	9.90
4½	1⅞ to 1⅞	UP to 1⅞	4½	6½	8⅓	11	13¾	16⅔	19¼	22	24¾	27½	11.70
5	1⅞ to 1½	UP to 1½	5	6¾	11¼	15	18¾	22½	26¼	30	33¾	37½	13.50
6	1¼ to 1¾	UP to 1¾	6	7¼	13½	18	22½	27	31½	36	40½	45	16.20
6A	1¼ to 1¾	UP to 1¾	6	7¼	18	24	30	36	42	48	54	60	18.90
7	1⅞ to 2	UP to 2	7	7¾	27	36	45	54	63	72	81	90	22.50
8½	2 to 2¾	UP to 2¾	8½	10½	84	112	140	168	ALL SIZES STOCK SHIPMENT				31.50
10	2¼ to 3	UP to 3	10	12	195	260	325	390					40.50
12	2¾ to 4	UP to 4	12	14½	270	360	450	540					54.00

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.



The One Complete Line

Complete Selection--Complete in Quality

Four models---18 sizes; every engine designed to meet certain particular requirements.

The man wanting power for a big cruising yacht or the man wishing to install power in a row boat will find the **right** engine in the Gray Line.

Yes, "There is a Gray for every Boat"—yachts, cruisers, speed, pleasure and work boats, ferry boats and canoes.

Engines of the 2-cycle type from 3 to 36 H. P. and 4-cycle power plants in 4 and 6 cylinder sizes.

GRAY MARINE MOTORS

2 CYCLE & 4 CYCLE

And the man who selects a Gray gets **real** power—he knows real motor boat satisfaction—he gets 100 per cent value in actual service for every dollar invested.

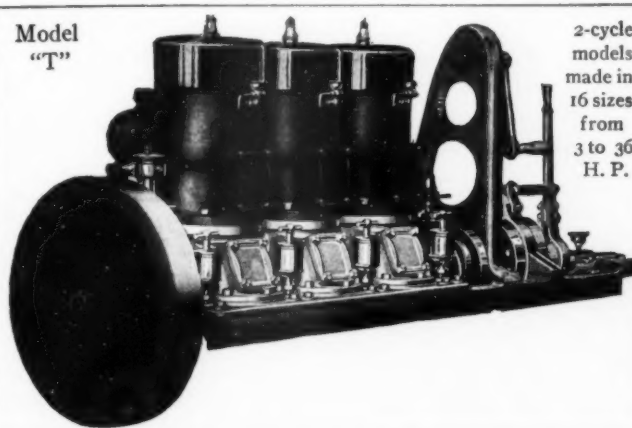
Not because we say so but because the facts are being proved daily by thousands of users in all parts of the world.

One thing is sure—you can't possibly afford to

make your selection without first getting complete information about the Gray Line—our organization—our methods of doing business—the quality of our product and the service we render.

Every man interested in a marine engine or motor boat should have our big engine book "M" and our Boat Buyers' Guide. Write for your copies today.

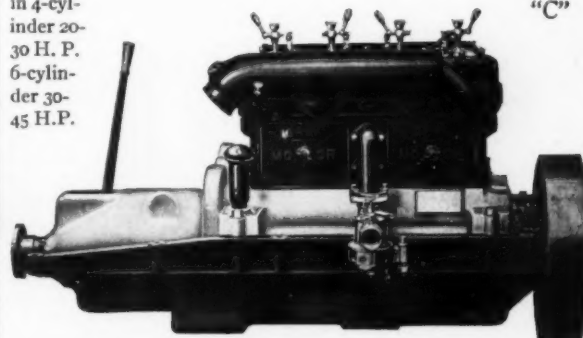
Model
"T"



2-cycle
models
made in
16 sizes
from
3 to 36
H. P.

4-cycle
in 4-cyl-
inder 20-
30 H. P.
6-cylin-
der 30-
45 H. P.

Model
"C"



Remember This There isn't a "cheap" engine in the Gray Line. Our 3 H. P. at \$55, 6 H. P. at \$89.50 and our double cylinder 6 H. P. at \$114.00 are absolutely high grade in every detail of workmanship and material.

The reasonably low prices that we quote on these sizes and all other engines in the Gray Line is due entirely to our splendid manufacturing facilities and exceptionally big output.

And behind every engine is a **lasting** guarantee that means something to you—the user.

GRAY MOTOR CO., 274 Gray Motor Bldg. Detroit, Mich.

Gray Complete Outfit

When you buy a Gray Motor you get everything ready to install engine in your boat. Carburetor, circulating pump and commutator, flange coupling, propeller, shafting, combination bronze stern bearing stuffing box, spark coil, spark plug, double throw marine electric switch, wire, water scoop, bronze water intake terminal, bronze water strainer, bronze gasoline strainer, water cooled muffler, lag screws, drain cocks, spark plug protector and complete 72-page instruction book and gas engine manual.



1914
CATALOGUE
FREE AND IT
WILL INTEREST
YOU
SEND FOR ONE

W & M REVERSING PROPELLERS

Guarantee satisfaction. Don't take our word for it. Investigate.

Safety First

Your safety requires absolutely perfect control over *both* speed and direction.

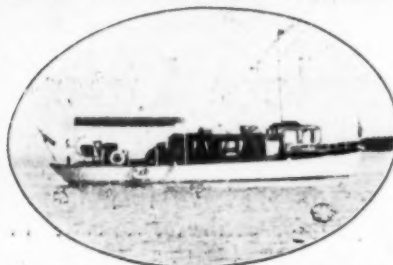
Install a W & M REVERSING PROPELLER and you will have this perfect control without sacrificing strength

and speed. W & M REVERSING PROPELLERS are as strong as a solid wheel and give maximum speed in every case.

MOTORS COST MONEY. Don't subject yours to the terrible wear and tear of a dirty, cumbersome reverse gear.

Roosevelt selected W & M REVERSING PROPELLERS for his South American trip because they are strong, speedy and sure. They are light, adding nothing to the weight, and they take up very little room.

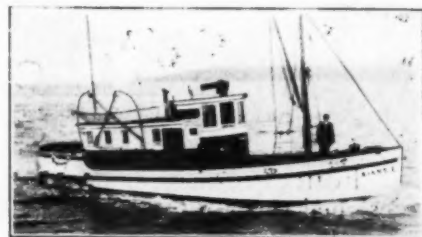
W & M Reverse Wheels are satisfying thousands. Why not you?



Mr. Niels Toelberg—The Bronx Satisfied Owner.

W & M REVERSE
WHEELS MEET
ANY REQUIRE-
MENTS

2 or 3 BLADE
8-in. to 6-ft. in dia.



Giant Powder Co.—Seattle Satisfied Owners.

WILMARTH & MORMAN COMPANY 1169 MONROE AVENUE, N. W.
GRAND RAPIDS, MICH.

A Comparison of Value

The following figures show the average number of agate lines of advertising carried by the leading marine magazines during 1912 and 1913, the average gains or losses per issue, also the total gains or losses on the year. This shows the comparative standing of these publications in the judgment of marine advertisers:

	Average Number of Lines per Issue		Average Lines per Issue		Total Lines	
	1912	1913	Gain	Loss	Gain	Loss
Motor Boating	39,146	40,846	1,700		20,401	
Power Boating	13,996	14,051	55		664	
Rudder	13,728	12,211		1,517		18,199
Yachting	11,777	9,284		2,493		29,915
Motor Boat	38,613	35,084		3,529		84,686

Show Time is Sales Time

The March issue of Motor Boating is the big Chicago Show Number. Use large space for results.

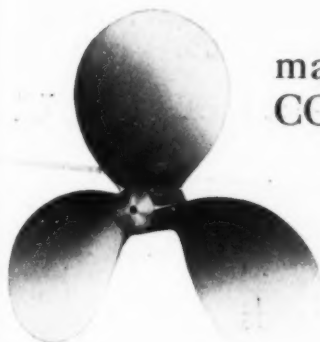
Send Copy for Your Advertisement Today

J. S. HILDRETH,
Adv. Manager

**MOTOR
BOATING**

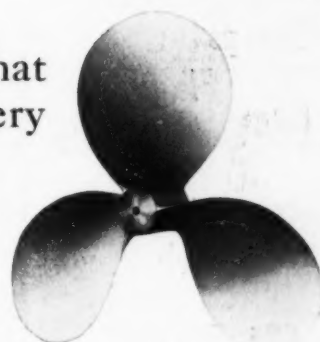
119 West 40th Street
NEW YORK

THE NEW COLUMBIAN AILSA CRAIG PROPELLER



makes the Columbian line so complete that COLUMBIAN AGENTS can supply every demand. No sales need be lost because customer demands some other type of wheel.

We have all types and sizes, and each wheel is the most efficient possible for its type.



Write for AGENCY PROPOSITION and "PROPELLERS IN A NUT SHELL"

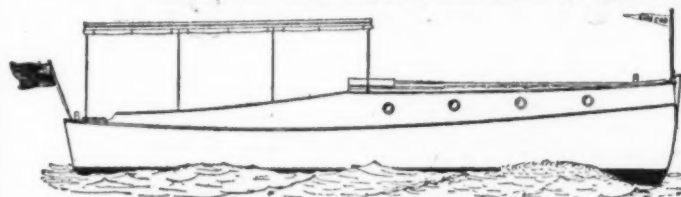
describing Columbian Rudders and Universal Struts and containing valuable tables of Speeds, Slips, Blade Areas and other data.

THE COLUMBIAN BRASS FOUNDRY

218 North Main Street, Freeport, L. I., N. Y.

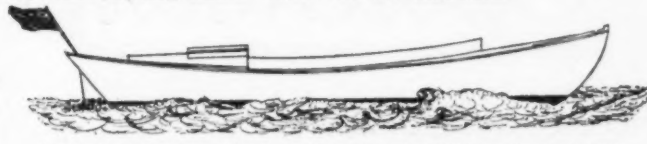
New York City Local Salesroom, 133 Liberty Street
FOR LOCAL SALES ONLY

DON'T BUY A BOAT UNTIL YOU HAVE SEEN THE EXHIBIT OF THE CAPE COD POWER DORY CO., at Madison Square Garden, New York City, Jan. 31-Feb. 7
But send for literature on Cruiser, 20-Ft. Special Dory, and Rowing Skiffs which will be exhibited.



28 ft. Cabin Cruiser—A Large Small Boat.

GURNEY DESIGN WITH TOILET, SINK, OIL STOVE, ICE BOX, SLEEPING ACCOMMODATIONS, RUNNING FRESH WATER, TOOL, DISH & CLOTHES LOCKERS. OVER 10 FT. COCKPIT.



Our leader 20 ft. special power dory, the safest little family boat built. Will stand the ocean water.

Other Boats We Build--U. S. Life Saving Dories, 16-Ft. Shallow Draft Motor Boat, Low Price Sportsman's Fishing Boat

BUILT BY CAPE COD POWER DORY CO., 455 Main St., Wareham, Mass.

Advertise at Buying Time

☐ March Motor Boating is the big Chicago Show Number. It comes at just the most important time of year for advertising effectiveness—at the climax of the Show Season and the beginning of the Buying Season.

☐ Motor boat enthusiasts are making plans for the coming season, selecting new engines, equipment and supplies for their boats and starting the general overhauling of their outfits that means quick sales and big profits for the timely advertiser. It is easier to sell to the boat owner now because he is in the buying mood.

☐ Insure a good season's sales record and help your dealers move your goods by using large space in March Motor Boating. Tell your story complete, so the buyer will feel that he has enough information to purchase at once after reading your advertisement.

SEND YOUR COPY AT ONCE—TODAY

J. S. Hildreth, Adv. Mgr.

**MOTOR
BOATING**

119 West 40th St., New York

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

You Saw Our Exhibit at Motor Boat Show!!!

Andrade
Windlasses
Vibrators

Clamps
Flags
Struts

Crescent
Spark Plugs

Logs
Mops
Kleen Eze

The
Reliable Fire
Extinguisher
Etc., etc.

But we could not secure a quarter of the space required to make *anything like a display* of our goods, and we suggest your sending 30 cents to cover postage and receive

Our Mammoth Catalogue

of 1012 pages. Ask for our latest circular matter, or get these *through your dealer*—either way, so we get you acquainted with our goods

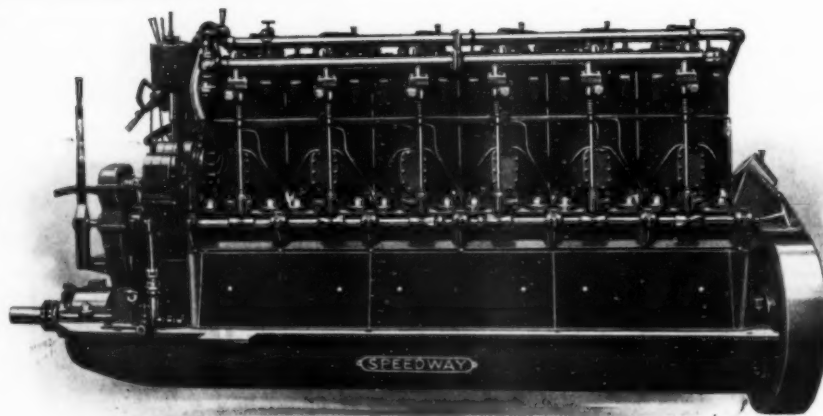
DURKEE 2 SOUTH STREET **NEW YORK**

Largest Marine Hardware Specialty

MANUFACTURERS IN THE U. S. A.

Factory at Grasmere, Staten Island, New York City

Speedway Gasolene Engines



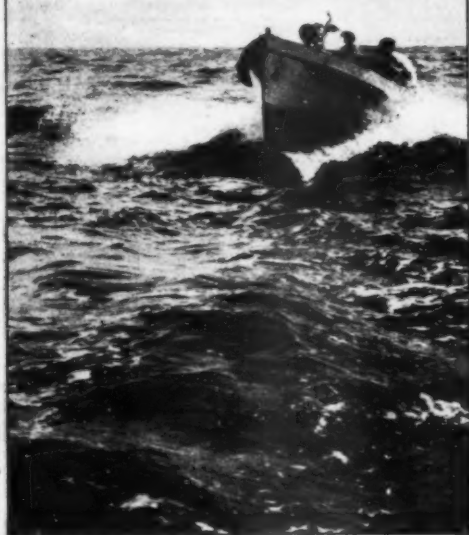
Built Exclusively by **GAS ENGINE & POWER CO. and** Morris Heights
CHARLES L. SEABURY & CO. New York City
CONSOLIDATED

Insures perfection in design, materials, construction and workmanship. New models. New catalog. New prices. Constructors also of steel and wooden yachts and launches, marine steam engines and water-tube boilers.

Look for us at the New York and Chicago Motor Boat Shows

Catalogue on request, Department A

FAIRBANKS-MORSE MARINE ENGINES



The Satisfaction of Perfect Reliability

There is satisfaction—real enjoyment—in skimming steadily through the water with a boat in which you have perfect faith—the boat that is driven by a Fairbanks-Morse engine. It starts so easily—runs so smoothly. Has the steady—staying—dependable speed that counts. Every piece of material that goes into our engines is thoroughly, rigidly tested. Every carburetor, every timer, is of proven efficiency. A rigid system of inspection in every department maintains an exceptionally high standard.

Fairbanks-Morse Marine Engines

are extremely simple in construction; have large hand-holes. Every part can be reached readily, and without special tools. All working parts ground to 1/1000 of an inch, every part interchangeable. No detail in the construction of these engines has been overlooked.

Type "K" two-cycle, medium-duty, slow speed engines, made in one and two-cylinder types, developing 7½ and 15 H.P. at 550 R.P.M. Types "E" and "G" two-cycle engines, 3½ to 24 H.P.

Don't fail to see these engines at the New York Motor Boat Show.

Catalog No. 3E1315 on request.

Fairbanks, Morse & Co.

Chicago, Ill.
Atlanta, Ga.
Cincinnati, O.
Denver, Colo.
Detroit, Mich.
Cleveland, O.
New York

Indianapolis, Ind.
Kansas City, Mo.
Los Angeles, Cal.
Louisville, Ky.
Milwaukee, Wis.
New Orleans, La.
Omaha, Neb.

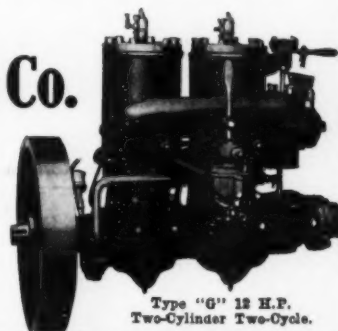
Portland, Ore.
Seattle, Wash.
Richmond, Va.
St. Louis, Mo.
San Francisco, Cal.
Salt Lake City, Utah
St. Paul, Minn.

For Canada Refer to Sales Branches at:

Calgary, Alta.
Montreal, Que.
Ottawa, Ont.

Saskatoon, Sach.
St. John, N. B.
Toronto, Ont.

Vancouver, B. C.
Victoria, B. C.
Winnipeg, Man.



Type "G" 12 H.P.
Two-Cylinder Two-Cycle.

"The Motor Car
of the Sea"

VIPER FIFTH TYPE

VIPER
Reg. Trade Mark

The Sea Sled

Patented by Albert Hickman

The first safe and comfortable motor boat of the automobile class.

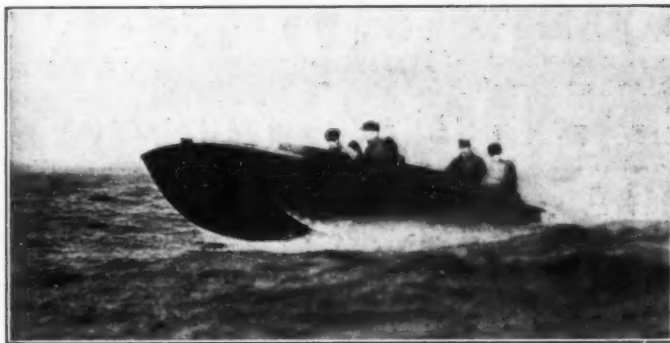
New Features

Inverted V bottom sections.

Outcurving bottom surfaces forward; in combination with parallel topsides forward and a horizontal stem.

Surface propellers.

Side-plate rudders.



30-mile, 5-passenger Sea Sled running in a heavy sea.

New Results

Complete safety and stability in rough water.

Absence of pounding.

Dryness superior to other types at all speeds.

Will run in shoal water and through heavy weed growths at speed.

The question is, are you to have the new type of boat or the old? We can guarantee you results that nobody else can give. In the meantime we can show you some of the best authorities in the country on record as to their opinions.

Ready for early delivery: Viper V type, 24-foot mahogany, 22-foot mahogany, 20-foot mahogany, 18-foot cedar. Viper IV type, 27½-foot mahogany. The last a 20-mile runabout, seating 8, suitable for Florida service. A splendid piece of workmanship. New Sea Sled bulletin on request.

The Murray & Tregurtha Co.
340 West First Street
South Boston, Mass.

The Viper Co., Ltd.
Pictou, Nova Scotia,
Canada

KINGSTON CARBURETOR

Will
You Accept a Gift from Us?

WE want to give you something of real value to every man who owns or operates a marine engine. This gift will improve the operation of your engine and increase the efficiency of your boat equipment to a marked degree. We want you to accept our



HORIZONTAL TYPE

30-Day Free Trial Offer

We want to give you 30 days of service from the best marine carburetor on the market. We want to give you the knowledge of carburetor perfection which will show you the maximum efficiency of your engine when operated with the best equipment.

Designed Especially for Low Grade Gasoline

The new Kingston Model "Y" is a special design we have brought out particularly for the present low grade of gasoline. It vaporizes this heavy fuel more thoroughly, gives more power and speed, makes starting easier, and economizes the fuel consumption.

The Kingston has always been essentially a marine carburetor. Our system of Floating Ball air valves is the only possible way to secure perfectly uniform results in all weathers, temperatures and climates. Our Single Adjustment feature affords maximum simplicity as there is nothing for the operator to adjust except the gasoline needle valve which requires only occasional attention. This carburetor is as near automatic as it is possible for an efficient mechanism to be.

Write Today for Full Information, Free Trial Offer and Guarantee

BYRNE-KINGSTON & CO., Kokomo, Indiana

New York Office, 1733 Broadway.
Seattle, 718-20 Central Bldg.

Detroit Office, 650 Woodward Ave.
Chicago Office, 1430 Michigan Ave.

Los Angeles, 332 Picco St.

PHANTOM
VIEW

Send for our bargain list of
REBUILT GUARANTEED
motors. Hundreds in stock.
All sizes and types.

BRUNS, KIMBALL & CO., INC.

132 Liberty Street, New York City

Branch Store, 608 Arch Street, Philadelphia, Penn.



TESTIMONIALS

J. P. Brittan, Grenfell, Sask., Can., writes: "I'm still running my 210 I built two years ago, and if anything she is better now than ever. I installed a 6 H. P. and have beaten everything on the lake. Before I started making boats by your system I couldn't saw a straight line, and in this boat everything was sawed out by hand except ribs and I had those cut out with a machine."



M. E. Steele, Fort Wayne, Ind., writes: "The patterns I got from you on the boat No. 232 with the frame were certainly O.K., and I can say that I am well pleased. I am sending you a photo of the boat making 12 1-2 miles an hour with a 6 H. P. engine. This boat took second prize in the Lake Jones boat races, July 4, 1912."



D. H. Cugin, Blue Creek, Wash., writes: "I made this boat pay me \$316 in 63 days and then sold it for \$250. I built it after a Brooks pattern, 16 foot transom stern launch, and cost complete, with a second-hand 10 H. P. Roberts motor, \$96.25. I have two orders to fill this spring."

**They
Saved
Money
Through the
Brooks System
Why Don't You?**

You cannot realize how easily you can build a beautiful, seaworthy boat, and save a big share of the boat builders' price, until you get the Brooks Boat Book.

Read the letter of Mr. Brittan, who says he couldn't saw a straight line, yet he built the fastest boat on a popular lake. You can do as well. Send for the Brooks Boat Book and see how you can

Save at Least $\frac{2}{3}$ and Have Greater Confidence in Your Boat

All the parts come to you cut, shaped and fitted. Illustrated instructions show you how to put them together. You know where every piece—even every nail and screw—is to go. You know that the very best material goes into your boat, and you can always have the feeling that it is *designed right and built right*. All the technical or skilled work is done here in the factory. We build a complete, full size boat—then take actual size patterns of every piece in the boat, marking each pattern to show you where it belongs. Difficult work is taken care of, too. Erect the frame, put on the planking and your boat is ready for painting, finishing, etc.

**Write Today for the Brooks
Boat Book. Mailed Free**

Learn About Popular "V" Bottom Model

Get this book and see illustrations of fine cruisers, motor boats, speed boats, family launches, sail boats, row boats and canoes, boats of all kinds, that you can build easily in spare time. Try the popular "V" Bottom Model—so simple and easy to build, and so speedy and seaworthy in service. Write today for our Boat Book—it's free. Address

BROOKS MFG. CO.
6302 Rust Avenue, Saginaw, Mich.

Largest Plant of its kind in the world. Originators of the Pattern System of Boat Building.

Only \$33 Buys the complete frame for this fine 23 ft. launch, including full size patterns and illustrated instructions to finish. Speed 9½ to 14 miles an hour—12 passengers. This and other models in Free Boat Book. Write for it.

\$2 and up
Buys full size patterns and full instructions for building any model.



EDISON BSCO

PRIMARY BATTERY

The Standard Closed Circuit Cell



EDISON-BSCO
Type 206 Cell, 200
Ampere Hours
Capacity.

Selecting an EDISON-BSCO Primary Battery for gas engine ignition means buying electrical energy in much greater quantities than is the case when dry cells are used. For this reason, the first cost of dry cells is lower, but the cost of energy per unit is much less with the Edison Cells.

When you install a set of Edison Cells you are guaranteed a definite length of service, which is regulated by the rate at which the cells are discharged. When the circuit is open, no action takes place, consequently no energy is dissipated. With dry cells the life is indefinite, depending, in addition to the rate of discharge, on how long before placing in service the cells were manufactured, the rapidity with which they dry out, whether exposed to dampness, etc.

Edison Cells exhaust only while the circuit is closed.

Dry cells deteriorate whether the circuit is open or closed.

If you want to get the benefit of all the energy you pay for, insist on EDISON-BSCO Cells.



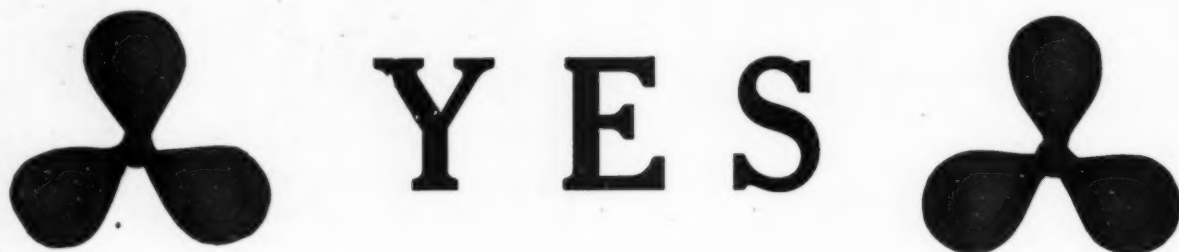
EDISON-BSCO Complete
Renewal, Showing the All-
in-One Assembled Element.

Catalog on request

The Cheapest Form of Battery Energy

THOMAS A. EDISON

THOMAS A. EDISON, INC.
261 Lakeside Avenue Orange, N. J.



There Is a Great Difference Between
HYDE TURBINE PROPELLERS

and the "Near-Hydes" which are being put on the market—
 The difference being in the finish, the metal, the balance and the efficiency.
 See that your propeller has the name HYDE with the diameter, pitch and trade
 mark stamped on the hub.

Hydrex
 TRADE MARK
 REG. U.S. PAT. OFF.

Hydrex
 TRADE MARK
 REG. U.S. PAT. OFF.

Hyde Turbine Type Propellers Are Manufactured By

THE HYDE WINDLASS COMPANY

BATH, MAINE

LAWLEY BOATS

The Highest Degree of Quality Ever Achieved in Boat Building

Lawley Boats have won a world-wide fame for quality and perfection in all details, large and small. They have gained a position which makes the words "Lawley Built," a term of superlative descriptive power in the marine world.

Lawley facilities are unequalled. We have the largest and best equipped plant of its kind in America. Modern methods and careful workmanship by experienced boat builders are responsible for Lawley quality. Every de-

tail of construction is handled within our own works.

We build all types of boats from a ten-foot yacht tender to the largest auxiliary yachts. Wood, steel or composite construction.

For those wishing a power equipment we can guarantee as unreservedly as our boats, we build Lawley Heavy Duty Motors. Four cycle, two, four and six cylinder, 20, 40 and 60 horsepower respectively. Also steam.

Correspondence solicited from prospective boat buyers. Our catalog sent on request

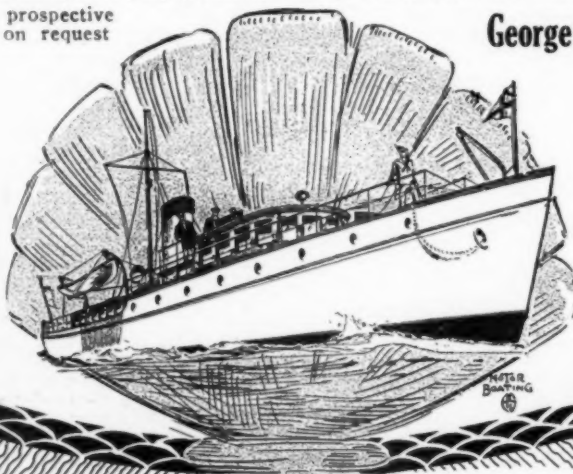
George Lawley & Son Corporation

Established 1866

NEPONSET, MASS.
 U. S. A.

Cable Address,
 "Lawley Boston."

**Motor Boats
 Tenders
 Cruisers
 Auxiliaries
 Engines**



MICHIGAN STANDS FOR QUALITY

BOAT OWNERS

If you want to win boat races buy the famous Michigan Propeller Wheels, Reverse Gears and high grade motor boat supplies.

Our specialties are Reverse Gears and speed propeller wheels, steering wheels, universal joints, rear starters and underwater exhausts, in fact, everything for fitting out all classes of motor boats, which can be supplied promptly, and our long experience is at your service.

Send for large, free catalog today, stating requirements

MICHIGAN WHEEL COMPANY

1112 Monroe Avenue

GRAND RAPIDS, MICHIGAN, U. S. A.

Eastern Branch, 69 Cortlandt St., New York City

JOE'S Famous Reverse Gears

The Gear that is right and tight for all powers and all speeds

JOE'S DUPLEX FRICTION DRIVE Gears for heavy duty motors up to 45 h.p. per 100 R.P.M. The gearing is quadruplex and the duplex friction drive is arranged to take the driving strain off of the gearing on the go ahead. THE ONLY COMMERCIAL GEAR on the market for big heavy duty work, having the same speed forward and reverse. BUILDERS OF BUSINESS MOTORS, this is the gear that you are looking for. Write for particulars.

JOE'S HIGH POWER gears for fast and medium speed motors.

JOE'S POSITIVE neutral one way clutches for high speed motors.

BALCONY SPACE 38, NEW YORK SHOW

The Snow & Petrelli Mfg. Co.

154 Brewery Street,
New Haven, Conn., U. S. A.

AGENTS

J. King & Co., 10 Church Row, Limehouse, E. London, Eng.
L. H. Coolidge Co., Seattle, Wash.
The Canadian Motor & Supplies Co., Montreal, Canada.
The Fairbanks Co., Hamburg, Germany.
The Gasolene Engine Equipment Co., 133 Liberty St., N. Y.
R. W. Thompson, 114 Light St., Baltimore.



JOE'S SAFETY REAR STARTER

Made in two sizes up to 40 h. p.

Larger ones made special. Non-kick back, positive release, Chain stopped from running, furnished with frame or bulkhead bracket as desired.

Write for prices.

We have the best gear in the world for your boat.

Write us the size and type of your boat and engine, and we will say the rest. Write for catalog.

Announcing Two New Three-Cylinder Models of **FRISBIE** FOUR CYCLE **MOTORS**

These new three-cylinder models were designed to meet the demand for motors of Frisbie quality with a range of horsepower intermediate between our two- and four-cylinder motors. They are strictly up to our standard of quality in design, workmanship, finish and service.

They have the famous Frisbie valves with removable cages, the valves being located in the cylinder head. This location, together with the remarkably large valves we use, gives the greatest power, speed and economy of fuel for the size of the motor and amount of fuel consumed.

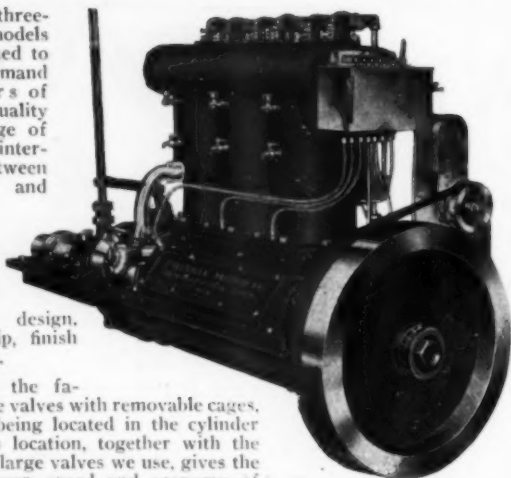
The cylinders are cast three en bloc. There are no grease cups—every part is lubricated by oil. Designed to run under full load from 5 to 10 hours without attention to lubrication. Equipment includes mechanical oiler, bilge pump and oil return pump, if desired. The $4\frac{3}{4} \times 5$ in. model is rated at 12-18 h.p., and the 6×6 in. model at 18-25 h.p.

KEROSENE OR GASOLINE

Frisbie Motors run equally well on gasoline, kerosene, distillate, benzine, alcohol, etc. No smoke or odor; the speed control is thoroughly flexible.

Write today for full specifications and prices

The Frisbie Motor Co., College St., Middletown, Conn.



ROBERTS

The Motors That Never Backfire



"SWEET 16" — 4-P 40 H. P. 36.73 M. P. H.

THE motor in "Sweet 16" is 5 years old, and has been in use every season. Champion of Puget Sound, she is the fastest boat for her power in the world. We make twelve sizes of motors, from 3 to 125 horsepower, for boats of all kinds. We build the lightest marine motors made for their power.

Write for Catalog Today

THE ROBERTS MOTOR COMPANY
1501 COLUMBUS AVENUE, SANDUSKY, O., U. S. A.



Trade Mark Registered
U. S. Pat. Office

TWO CYCLE

Leaders in Design, Workmanship and Service.

Palmer Engines for 1914 will be built in three distinct types—two-cycle two port, two-cycle three-port and four-cycle models, thus giving the best and most economical size and style of motor for every class of marine service.

Palmer Marine Engines have won an enviable reputation for their advanced design, honest construction and reliable service, wherever marine engines are known or used. They have always been leaders in their field, originating many principles of construction which are now accepted as fundamental.

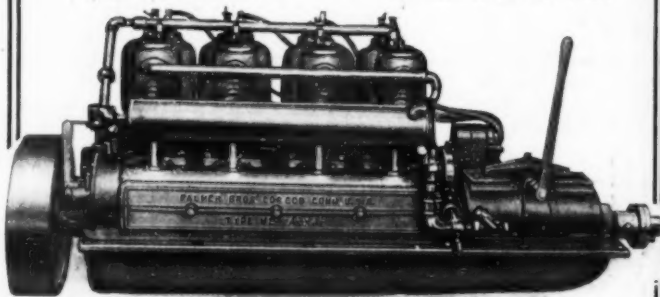
The selection of an engine for your boat is a matter of vital importance to you. The Palmer is the kind of an engine you want. Let us prove it to you. *Send today for our New Catalog.*

PALMER BROS. — — — **Cos Cob, Conn.**

BRANCH OFFICES:

New York—31 E. 21st St.
Philadelphia—54 No. 6th St.
Boston—77 Haverhill St.

Providence—123 Dyer St.
Portland, Me.—Portland Pier.
Baltimore—126 Market Place.

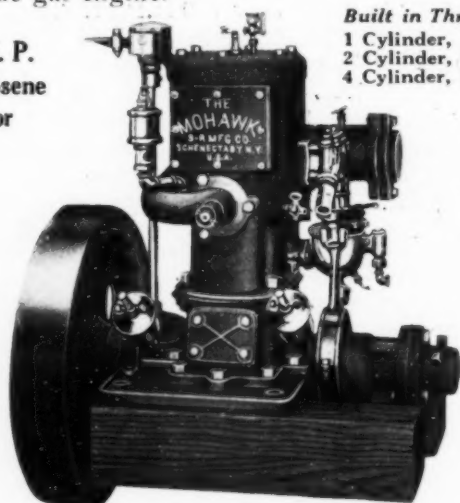


"MOHAWK" 1914 KEROSENE MOTORS

will reduce your fuel cost **TWO-THIRDS** without losing any of the advantages of the high-grade gas engine.

**6 H. P.
Kerosene
Motor**

Built in Three Sizes
1 Cylinder, 6 H. P.
2 Cylinder, 12 H. P.
4 Cylinder, 24 H. P.



If you are located in a good boating center, we have a special introductory offer which will surprise you. "MOHAWK" gasoline engines are built in 13 sizes, from $3\frac{1}{2}$ to 60 H. P.

Foreign Agents Wanted

The S-R Manufacturing Company, Schenectady, N.Y.

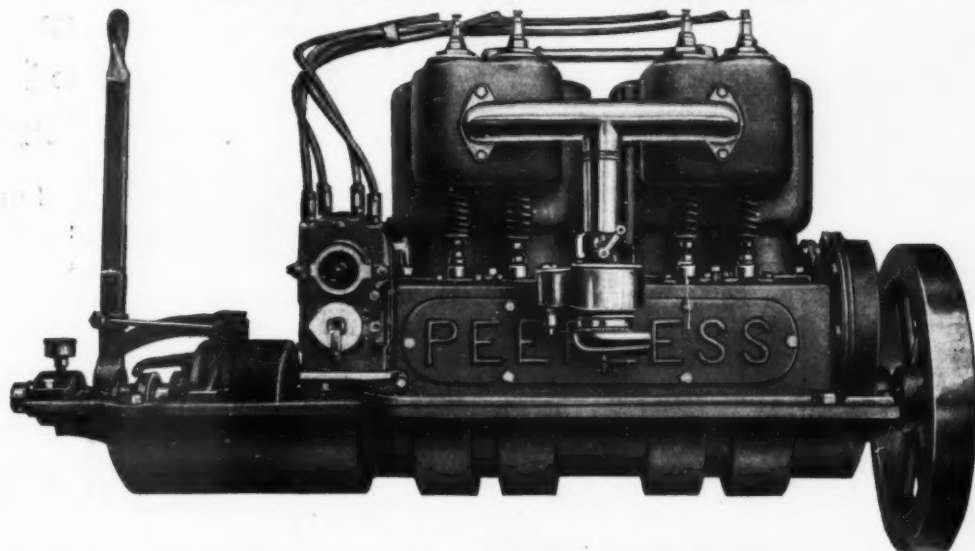
YEARS AHEAD

Again the manufacturers of the PEERLESS ENGINE prove that their product is years in advance. It will be remembered that the PEERLESS was the first high grade engine at a popular price, other manufacturers were quick to imitate us, but none have been able to equal the up-to-date design or the high quality of our engines.

The opening of the 1914 season still finds us far in the lead; the Standard "PEERLESS" with a bore and stroke of 4 in. x 6 in. is the only engine of this size before the public at this time. With this additional length of stroke the PEERLESS will develop considerably more power at the same speeds, or the same power at a greatly reduced speed. This feature gives greater economy than it is possible to attain with any other engine.

Four cylinder, 16 to 20 H. P. Bore 4 in., stroke 6 in. - - \$300.00
Two cylinder, 8 to 10 H. P. Bore 4 in., stroke 6 in. - - 175.00

"Joe's" Reverse Gear on extension base, \$40.00 extra.



Four cylinder, 25 to 35 H. P. Bore 5 in., stroke 6 in. - - \$400.00
Two cylinder, 12 to 16 H. P. Bore 5 in., stroke 6 in. - - 250.00

"Joe's" Reverse Gear on extension base, \$50.00 extra.

PEERLESS ENGINE SERVICE brings unsolicited letters of this kind

LETTER FROM MR. RICHARD ADELT

Tarrytown, N. Y., Dec. 29, 1913.

Peerless Marine Motor Co.,
Buffalo, N. Y.

Dear Sirs—Here is something in regard to your motor that may be of interest to you. Last spring I purchased a 27 ft. raised deck cruiser. The motive power was a standard make, two-cycle engine. I had trouble from the beginning, and finally had to give up using the boat. My wife and I had planned to spend our vacation cruising, and our disappointment was great. Three weeks before vacation time we decided to buy a new engine. Mr. Jacobsen, our boat builder, recommended your engine, and we were soon convinced that it was the best engine in the market, considering the price. In two weeks' time the engine arrived. Several days were spent in installing it. However, the first actual test was made the day we went on the cruise. This was my first experience with a four-cycle engine, but we had absolutely no trouble from the time we started until our return. We covered three hundred miles, and rode through several storms. The gasoline consumption was surprisingly small—somewhat less than one gallon per hour. We were driven at a speed of eight miles per hour, and always towing a dingy. My wife and I were delighted; we certainly had the most successful cruise in our experience, and this, thanks to your excellently designed engine. Any time anyone is interested in one of your motors, I will be only too glad to give a demonstration.

Very truly yours,

Richard Adelt.

QUALITY and PRICE

Manufacturers of high-priced engines have insinuated that a better class of materials and workmanship entered into the construction of their engines. This, however, is not a fact. Our castings are made of the same iron; our crank shafts are of the same carbon steel; our tools, fixtures, jigs, etc., are decidedly better, owing to the fact that we confine ourselves to one design of engine and build them in comparatively large quantities. The size limits that are maintained in the PEERLESS ENGINE would stagger the manufacturer who is building twenty sizes with the same equipment. Twenty sizes means a few of each every season, and not hundreds as is the case with the PEERLESS.

Our low price is made possible by cutting out all useless expense. Every man in the PEERLESS organization is a producer; consequently we can produce the PEERLESS ENGINE at our unequalled price.

PEERLESS MARINE MOTOR COMPANY

Look for us at the New York Motor Boat Show

BUFFALO, N. Y., U. S. A.

This Big Marine Engine Factory

Let us know your approximate requirements in the marine engine line and we will give you interesting and valuable information on the size and type of Wisconsin Motor that will give you maximum efficiency. In the steady grind of actual boating use these engines stand unsurpassed.



This is the Largest Plant in America engaged in the manufacture of Marine Engines.

In this modern "saw-tooth" building every energy of a big, expert

organization is centered upon the production of engines that deliver the service. The size of the plant is a positive and readily appreciated advantage, which shows in the consistent performance of Wisconsin Motors.

Wisconsin Motors

CONSISTENT

Leaders in Their Class

Best Equipment

The mechanical facilities of our factory are unrivaled. The most accurate tools known to engine builders are used—efficiency governs every operation.

Improved Design

In design and construction Wisconsin Motors represent the highest development of the motor builder's skill. Exclusive features add to their efficiency.

Tested Materials

The raw materials used in building Wisconsin Motors are carefully selected with reference to their uses in the finished engine. Every part is made of the best material for the special purpose it is intended for.

Careful Workmanship

A specially trained force of designers, engineers and mechanics, working under expert supervision, assure the utmost degree of mechanical perfection.

Thorough Inspection

All Wisconsin Motors are assembled with extreme care, and the finished engines must sustain severe practical tests before leaving the factory.

A Definite Guarantee

This big organization stands behind its product to the limit. All Wisconsin Motors must give satisfaction. Should any parts prove defective within one year, they will be replaced free of charge.

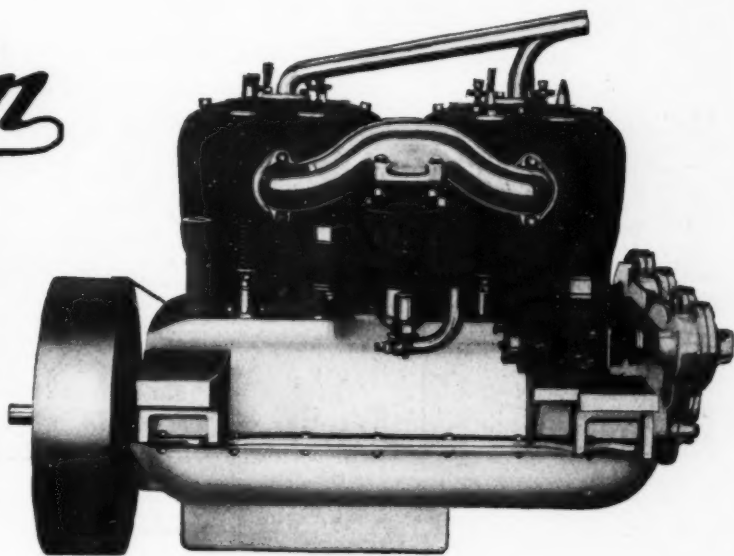
WISCONSIN MOTOR MANUFACTURING CO.

Offers You Unusual Service

The experience of the Wisconsin Motor Manufacturing Company in the manufacture of both automobile and marine engines, assures you lasting satisfaction. In all the big road races of the year, Wisconsin Motors swept the boards, while on the water they won the championship of Norway. This shows that in design, construction and performance Wisconsin Motors are *right*.

Wisconsin
CONSISTENT
Motors

Wisconsin Motors start easily, run steadily and practically without vibration, and are always under perfect control. You can depend upon them for consistent performance under all conditions. They are made in all sizes, 4 and 6 cylinder.



This Simple, Strong, Speedy, Medium-Duty Motor carries no extra weight, but delivers maximum service at minimum cost

There are no unnecessary parts in Wisconsin Motors—no complicated mechanism to constantly get out of order. While sturdily built for hard service, the fact that they carry no unnecessary weight makes a powerful appeal to the experienced motor boater. They are medium-duty, high speed engines, which develop a wonderful power on a low consumption of gasoline. All parts are easily accessible but adequately protected. Their smooth running quality reduces upkeep costs to the bottom-notch.

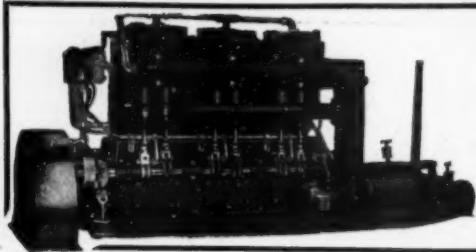
A Perfect, Self-contained Oiling System

The oiling system used in Wisconsin Motors never fails. Oil is pumped automatically to the working parts in just the right quantity, and is kept in prime lubricating condition by the location and construction of the oil chamber. In no other type of marine engine is the oiling problem solved so perfectly as in the Wisconsin Consistent Motor.

WRITE US TODAY

Find out how well the Wisconsin Motor is adapted to your power boat needs. Give us an idea of your needs and we will specify the size and type of engine required and tell you its cost. Catalogue describing Wisconsin Motors will be sent on request.

Dept. 33 - - - Milwaukee, Wisconsin



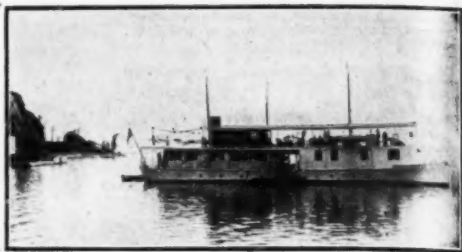
"WOLVERINE"

The Motor with the Bore and Stroke
HEAVY DUTY MARINE ENGINES
FOR WORK OR PLEASURE

Catalog No. 53. Your request brings it.

WOLVERINE MOTOR WORKS
BRIDGEPORT, CONN., U. S. A.

(Formerly Grand Rapids, Mich.)
"Look for us at the New York Motor Boat Show."



House boat "Siouan," two 75 H.P. "Wolverine" Engines



WISCONSIN MACHINERY & MFG. CO., Milwaukee, Wis.

Gentlemen:—

HELP.

I AM TIRED OF ROWING

(Sign Here).....

MAIL
THIS TODAY



ORIOLE MARINE ENGINE **KEROSENE GASOLINE**

Send for 1913
Catalog

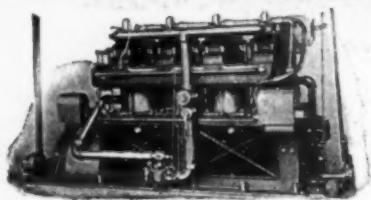
KEROSENE ATTACHMENT

Heavy Duty, Two Cycle, 5 to 20 H. P., \$110 to \$355.
KEROSENE ATTACHMENT tests show no more carbon than with Gasoline. Simple—
Economical—Reliable. Attachment extra—Single cylinder, \$17. Double cylinder, \$25.

Used all over U. S.

PAGE ENGINEERING CO.

Hull and Cleggett Sts., Baltimore, Md.

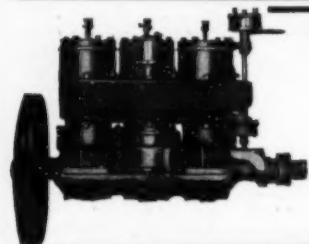


30-40 H. P. Special Engine built for U. S. Coast.

Gasoline Yachts and Engines

NOTED FOR RELIABILITY
TREGURTHA WATER TUBE BOILERS
STEAM LAUNCHES AND ENGINES
ELECTRIC LIGHT OUTFITS

MURRAY & TREGURTHA CO.
340 WEST FIRST STREET SOUTH BOSTON, MASS.



MORRISTOWN ENGINES

FROM 2 TO 30 H. P.
HIGH SPEED :: LIGHT WEIGHT :: HIGH GRADE

Ask for Catalogue.

WE ALSO BUILD HIGH GRADE BOATS—LARGE OR SMALL.

Morristown Boat & Engine Works :: **Morristown, N. Y.**



31' Cruiser

"BOATS of QUALITY"

HIGHEST GRADE. MODERATE PRICES.

Cruisers—Day boats—Speed boats—Hydroplanes—Sail yachts
and Yacht tenders built to order. Two stock models 31' Cruiser
and 22½' Runabout.

Write for booklet and see us at the N. Y. Show.

MILTON BOAT WORKS, Rye, N. Y.

Designers and Builders

5 Railways

Storage

Repairs

Painting

22 1-2' Runabout



Don't Be Rigid!

During our experience imitations have arisen. Some have been fought off, some died off—but doesn't the imitating strengthen your confidence in the originals—tried and true? Imitation is the sincerest flattery.

The best boat builders, naval architects, and engine manufacturers have helped us from the start. We have a regular "Blue Blood" Directory showing the high-grade ones. We notice these customers are pretty reliable men; they use good materials and all high-grade fittings—conscientious men you can trust a good job to. We'll give you this list of names if you want to buy a good boat or engine.

Auto Steerers, Rudders, Reverse Gears, Propellers, Silencers, Tanks, Tachometers, Horns, etc., are some more specialties in 1914 catalog along with regular marine hardware. Write for catalog. Please state whether for new boat or repairs.

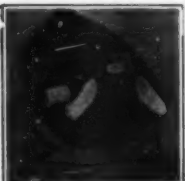
MECHANICAL DEVICES CO.

9th Street

WATERVLIET, N. Y.

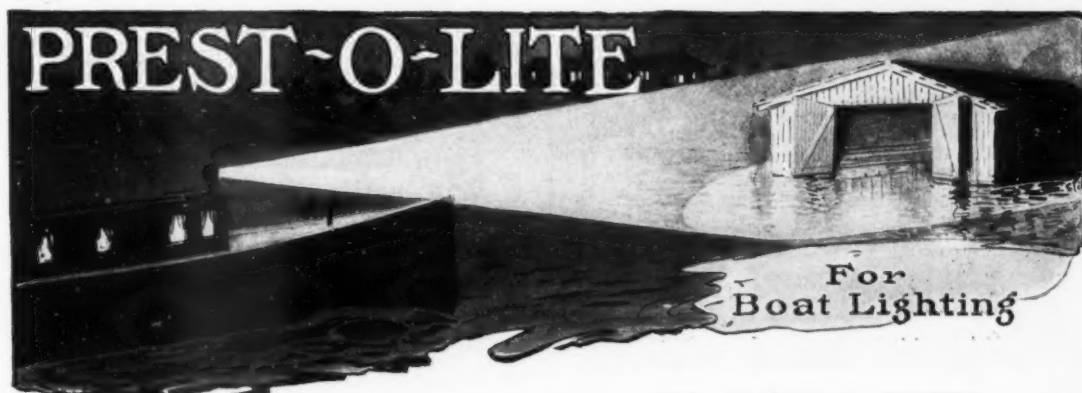
Dandy Dink

"The TENDER for TOUGH service." HEADQUARTERS for POWER & ROWING TENDERS. Open boats & CRUISERS all sizes. Engines & ACCESSORIES. Wisconsin Row Boat Motors. **THE WATER CRAFT CO.** 221 Fulton Street New York



Profitable Advertising

consists in placing your selling message before the greatest number of possible buyers. MoToR BoatinG has the largest guaranteed circulation in the marine field, reaching boat owners exclusively and of a class who can afford to buy what you want to sell.



You want *dependable* lighting on your boat.

It must not have mysterious troubles.

Must not fail you far from help.

Prest-O-Lite has proved its absolute reliability—its freedom from trouble—its efficiency.

And you do not expose yourself to the constant care of delicate and complicated apparatus—you need not clutter up your boat with dynamos, batteries, shunts, switchboards or delicate connections—you need not sacrifice the power and speed of your boat.

The Result of Experience

*"New York City,
Dec. 9, 1913.*

*Prest-O-Lite Co.,
Indianapolis, Ind.*

Gentlemen:—

Is your lighting system good for 47 ft. cruiser I am now building? I'm sick of electric generators, storage cells, automatic cut offs, motors, etc., all of which junk I've had in previous boats. Please send me information."

(Name on request)

Prest-O-Lite is simple, substantial, trouble proof.

Anyone can understand and operate it. It requires no extra mechanism and weighs little.

It not only costs less to install but far less to operate than any electric system. Electrical repairs, battery replacements, light bulbs, fuel consumed in driving dynamo and other items cost far more than the necessary amount of Prest-O-Lite gas.

It does not rob your boat of speed by using power to run a generator.

Prest-O-Lite in different sizes provides ample supply of light for any size of boat.

"Push-the-Button" Convenience

Ideal convenience in lighting the searchlight and the port and starboard lights, is afforded by the Prest-O-Lite. Turn on the gas, press a button and the lamps are lit, with the flame correct in height.

Prest-O-Lite can also be used, with attractive fixtures, for any number or kind of cabin lights. The gas may be turned on and off at the jet, precisely like city gas. Our Automatic Reducing Valve gives the correct flame in all lamps at all times, no matter how many are turned on.

Simple to Install

Prest-O-Lite installation is very simple. Any plumber or mechanic can do the work in a few hours.

The Prest-O-Lite Oil Lamp Adapter is easily and quickly installed in any oil lamp and makes it a combination gas-and-oil lamp with the oil in reserve.

The gas connections (and the automatic lighter connection, if also used) are instantly detachable, making the lamps easy to disconnect if you wish to remove them during the day.

Send for This Folder

It tells why Prest-O-Lite is the best, simplest and most convenient lighting system for any boat, from a small sail boat to a big steam yacht.

It shows views of fine yachts and power boats with Prest-O-Lite equipment.

Get the real facts on lighting before you buy any lighting equipment.

The Prest-O-Lite Co., Inc.

260 Speedway : : Indianapolis, Ind.

Exchange Agencies Everywhere

The Prest-O-Lite Co., Inc.

260 Speedway, Indianapolis, Ind.

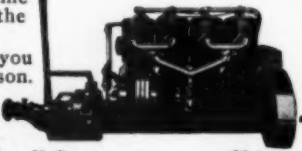
Please send information on all lighting systems to —

ANDERSON ENGINE

DON'T KNOCK

ANDERSON ENGINES got out of the knocking class years ago. Fine bearing metal took out the knock.

You handicap your craft if you overlook Anderson Comparison. Write for booklet.



ANDERSON ENGINE CO.
(New Address) 4032 North Rockwell Street - Chicago

"The Automatic" FOUR CYCLE MARINE ENGINES

Built in all sizes from 3 to 250 H.P., with one to six cylinders. The ideal engine for launch, cruiser or work-boat.

May we send you the AUTOMATIC booklet?

The Automatic Machine Co.
Bridgeport, Conn.

ELECTRIC SEARCHLIGHTS

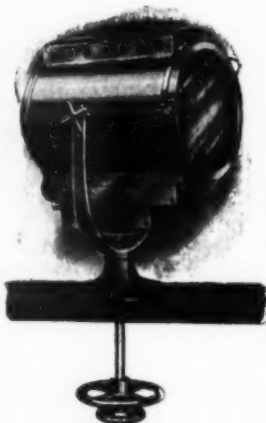
Send TODAY for Catalog "A" Containing Valuable Information About Modern Lighting Plants.

We have equipped some of the finest power boats, yachts and launches afloat with Direct Connected Generating Sets. All leading ship and launch builders use them, because they are unequalled in brilliant, dependable service.

Searchlights in designs from 7 in. to 60 in. diameter.

Let us tell you about our big line.

The Carlisle & Finch Co.
261 East Clifton Avenue
CINCINNATI - OHIO



The Cleveland Auto Boat Mfg. Co.

Builders of all kinds of Pleasure and Commercial Motor Boats

Special Winter Sale!

For delivery prior to April 1st we offer our well known 18 ft. Auto Craft Special with 3 H. P. Ferro Engine and regular fresh water equipment at \$160.00 cash, f.o.b. Cleveland.

Regular Price \$200.00

BULB SHANK MOORING ANCHOR

Do You Ever Worry?

Of course you do, during every heavy storm and bad blow, unless your boat is moored to a Bulb Shank Anchor.

If it is, then you are contented to know you have done all that any man could do to insure its safety.

If your boat breaks away and pounds on the dock or lands on the beach the damage will probably be more than a dozen Bulb Shanks. This anchor is the

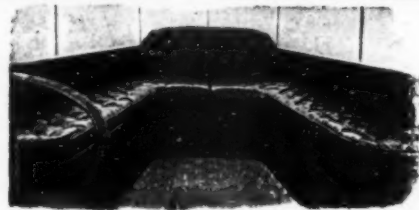
cheapest and best insurance you can buy; figure it out.

The bulb on the end of the shank makes the anchor lie flat. When a sudden strain comes on the chain, the shank rises and relieves the strain. The partitions in the head prevent its balling up with mud, and the eye for the trip line allows you to get the mooring up at the end of the season without the use of a derrick. Our free "Mooring Book" will tell you about this anchor. Send for it now.



Ask your dealer. If he cannot furnish you, write us direct, giving his name and address, and we will see that you are supplied.

FAIRHAVEN IRON FOUNDRY COMPANY
Water St., Fairhaven, Mass.



Showing life-preserver cushions in cockpit of motor yacht.

WE are making a specialty this season of our life-preserver Cushions, covered with genuine Moroccan leather, with filling of Prime Java Kapoc, the lightest and most buoyant filling known.

To stimulate the early placing of orders, we will accept a limited number of orders for these cushions at a special price of seventy-five cents per square foot.

Cushions That Fit

Manufactured since 1845, by

Life-preserver Pillow Cushion as per cut, Eighty-five cents each, or nine dollars per dozen. Size 16 x 16. Send for booklet.

M. W. FOGG
202 FRONT STREET
NEW YORK

WARNING! COMPLY WITH THE LAW!



Equip your motor with a HYDREX SILENCER

The most efficient silencer made. Scientifically designed on a new principle, it cools and silences the exhaust absolutely without back pressure. Approved by U. S. Government Inspector.

Don't confuse the Hydrex with old style sheet metal mufflers. It is always cool, always in working order. No odor; no clogging; nothing to wear out. Takes least room in boat. For all motors, 2 or 4 cycle.

Write today for prices and our free booklet "Practical Details."

HYDREX SILENT EXHAUST WORKS

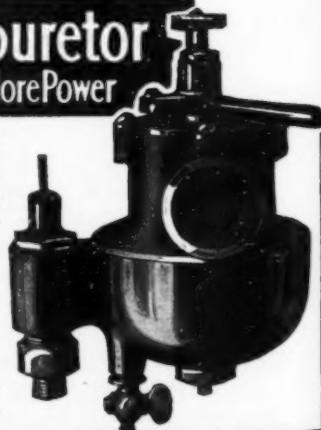
36 Church Street New York City
Chicago: Geo. B. Carpenter & Co., 436 Wells St.

KRICE Carburetor 20% More Power

We absolutely guarantee the Krice Carburetor to use less gasoline—give better control and 20% more power. Your money back if it doesn't.

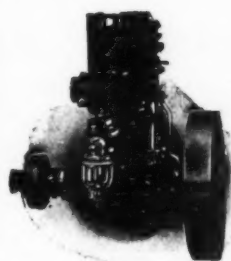
The only sure way to know that you are getting all the power from your engine is to try a Krice Carburetor. Write today for literature.

KRICE CARBURETOR CO.
1201 Oakland Ave., Detroit, Mich.



MIANUS STURDY

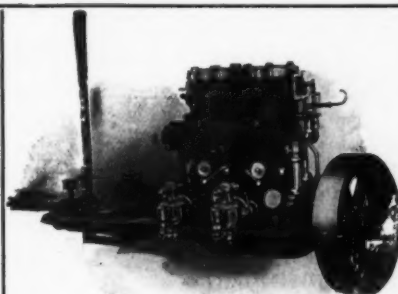
POWERFUL MOTORS



5-H.P. MIANUS—1914 Model 77

A FEW MIANUS FEATURES

TRY to get all these on some other make of engine. You will find each one used as a talking point on some other engine, but NO OTHER engine has all.



15-H.P. MIANUS—1914 Model

- 1—GUARANTEED FOR LIFE.
- 2—OPERATES ON GASOLINE, KEROSENE, FUEL OIL OR GAS OIL.
- 3—CONSUMPTION—Most economical engine on the market. Consumes less than one pint per horsepower per hour.
- 4—POWER—Develops more power than any other engine of the same bore and stroke.
- 5—PARTS—Absolutely interchangeable.
- 6—GRINDING—Cylinders, pistons, rings, and cranks ground to within one one-thousandth of an inch of proper dimension.
- 7—PULL OUT IGNITER—The whole ignition device can be removed without changing adjustment by taking out two screws.
- 8—REMOVABLE HEAD—Can be removed without disconnecting any other part of the engine or attachments.
- 9—REMOVABLE CYLINDER—Can be removed without taking motor from boat or even disconnecting exhaust or water piping.
- 10—SEPARATE CRANK CASE in two pieces.
- 11—HAND HOLE PLATE making connecting rod adjustments very simple.
- 12—FLANGE COUPLING—The convenience of this need not be explained, and is only mentioned to show how the MIANUS combines convenience with efficiency.
- 13—CRANK SHAFT—Drop forged and stepped so that if through lack of lubrication the crank is cut, it can be turned in a lathe without reboring flywheel or coupling.
- 14—CONNECTING ROD—Drop forged with removable bushings on each end. New bushings can be inserted with very little expense and trouble.
- 15—TWO CYLINDER MOTORS—All equipped with two carburetors, one can be closed off entirely and the motor run very slowly on one cylinder. This feature can also be used to great advantage on a motor with reverse gear running neutral.
- 16—IRIDIUM SPARK POINTS—Not affected by electricity. Do not corrode, and are soot proof.
- 17—FACTORY—The best equipped marine motor shop in the world.
- 18—WE MAINTAIN THE FOLLOWING BRANCHES TO GIVE SERVICE TO OUR CUSTOMERS.

New York City: 321 West 42nd St.
St. John, N. B.: 14 North Wharf.
Norfolk, Va.: 215 Main St.
Newark, N. J.: 158 Front St.

Baltimore, Md.: 128 Market Pl.
Seattle, Wash.: Colman's Dock.
Boston, Mass.: 12 Commercial Wharf.
Philadelphia, Pa.: Bourse Building.

Jacksonville, Fla.: 24 So. Ocean St.
Portland, Me.: 29 Portland Pier.
Providence, R. I.: 144 Dorrance St.
Eastport, Me.: 127 Water St.

The Mianus Motor Works, Stamford, Conn., U. S. A.

Trade Mark



S & M MARBLEHEAD ANTI-FOULING GREEN

The cruising man says—I hate to sail a boat that is dragging along with a foul bottom—Marblehead Green makes easy going all summer, and it stays clean. That means a lot against Head Winds and Tide.

For Racing—it takes a wonderful Slippery Polish—it beats Pot Lead.

It is a True and Powerful Preservative and Anti-Fouler; in Southern waters it is the only substitute for Copper Sheathing.

Two bright and handsome shades.

“Emerald” and Light
Yacht White and Yacht Varnish Black for Topsides

We also make a high grade Anti-Fouling Bronze

STEARNS-McKAY MFG. CO., Marblehead, Mass., U. S. A.

A NEW PRIMING COCK

Will Not Leak, Stick,
nor Seize

Will Grind in Instantly

Cheaper than the troublesome
old kind

MADE BY

MORGAN MFG. COMPANY
JOHN ST. NEWPORT, R. I.



NOTE THIS
BALL JOINTED
VALVE WITH
SCREW DRIVER
SLOT FOR
GRINDING
NOTE THIS
LARGE
STRAIGHT
HOLE

Which is a guarantee
of service and
quality

M'n'f's of Morgan's
Hose Clamps and
Utility Tools

ARE YOU

Building, repairing, refitting, overhau-
ling, painting or installing?

Send 8c in stamps to cover postage on
our Catalogue.

Everything you need at the Quality House.

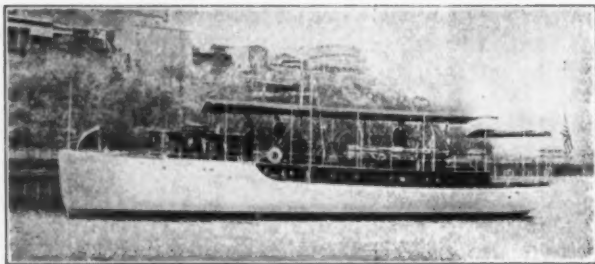
A. S. MORSS CO.

43 HIGH STREET

BOSTON

New York Yacht, Launch & Engine Co.

MORRIS HEIGHTS, NEW YORK CITY



ABALONE, E. H. Lyon, New York.

Builders of
20th CENTURY MOTORS

12 H. P., 3 cylinder, to 100
H. P., 6 cylinder

Send for catalogue

Builders of
YACHTS

of all description

Let us figure on your new boat

Light Your Boat By Electricity

“SMILE”
LIGHTING
SYSTEMS

are made for
all sizes of
power boats and
yachts. They are
the ideal of electric lighting outfits for
boats. Right in price; perfect in results.

Write today for 1914 catalog and prices

R. S. MILLS, 136 Liberty Street, New York City



Do You Wish to Save Money?

Compare these prices with what you would pay else-
where and see what you will save by purchasing from us

Set of two galv. Fresnal Glass lights for Class 1.....	\$2.30	3 x 12" Canvas Fenders.....	25
Set of four galv. Fresnal Glass lights for Class 2.....	4.00	Automatic Boat Drainers.....	3.50
Set of four galv. Fresnal Glass lights for Class 3.....	6.00	Pol. brass Bow Checks, per pair.....	25
Schebler Carburetor, 1" size.....	7.50	Pol. brass Stern Checks.....	14
Polished brass Check Valve, 1".....	.90	Power Bilge Pumps.....	3.90
Finished brass 8" Bell.....	1.20	Spark and Throttle Controls.....	1.10
Polished brass Bilge Pumps.....	1.25	1" Deck Plates.....	.10
Polished tin Fog Horns, 20".....	.35	1" Stuffing Box.....	.60
Polished brass Electric Horn.....	3.00	1" Stern Bearing.....	.60
Polished brass Two-tone Horn.....	1.20	Galv. Steering Wheel, 12".....	.60
Life preservers, government inspected.....	.50	Pol. brass Steering Wheel.....	1.15
Mica Jump Spark Plugs, each.....	.25	Switches.....	.12
Jump Spark Coils, each.....	3.00	10" Stillson Wrenches.....	.50
1" pol. brass Flush Flag Pole.....	.35	Nickel-plated Comb. Pliers.....	.20
Sockets, per pair.....	.35	Reverse Gears.....	11.00
		Magnets.....	7.50

Free for the asking. Send for our highly illustrated catalogue.

UNIVERSAL MOTOR BOAT SUPPLY CO.

Office: 287 Broadway

NEW YORK CITY

WAREHOUSES: ATLANTIC HIGHLANDS, N. J.

Distributors for Kingston Specialties, Wheeler & Schebler, Agent for Wonder Mfg. Co., Russell Elec. Co., Pyke Automatic Boat Drainers, Gies Gear Co.

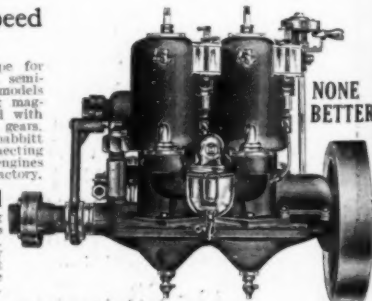
Toledo MARINE MOTORS

Pleasure — Semi-Speed
Commercial

All models are 2-cycle, 2-port, type for medium duty, suitable for pleasure, semi-speed or commercial boats. Several models can be equipped with self-sparking magnets. Jump spark ignition is used with vertical timer driven by cut bevel gears. Bronze plunger pump, adjustable ball joint bearing, drop forge cranks and connecting rods, die cast bearings. Toledo engines are being built in our new modern factory.

More Local Agents Wanted

With our facilities for manufacturing and the excellent reputation Toledo motors have gained for themselves, we find it necessary to appoint many new agents this year. Write us at once regarding your territory. Write for catalog W.—just off the press.



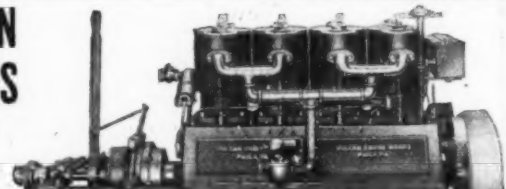
THE UNIVERSAL MACHINE CO

1600 HICKS STREET

BOWLING GREEN, O.

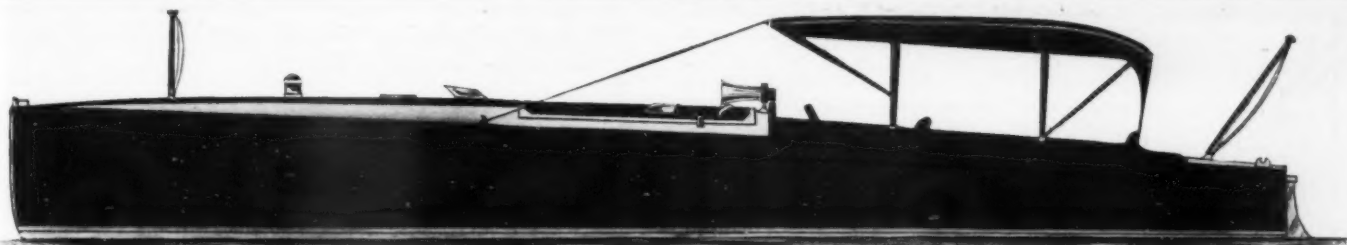
VULCAN ENGINES

Gasolene
— OR —
Kerosene



H. P.	No. of Cyl.	Bore	Stroke	Rev.	Weight	Dia. Fly Wheel	Dia. Prop.	Price
4	1	4 1/4	6	500	300	18	18	\$ 145.00
5	1	5 1/4	6 1/4	500	375	20	20	\$ 190.00
7 1/2	1	6 1/2	7 1/4	450	450	21	22	\$ 220.00
8	2	4 1/2	6	550	650	18	21	\$ 340.00
10	2	5 1/4	7	475	900	20	24	\$ 400.00
15	2	6 1/2	7	475	1,050	21	26	\$ 520.00
18	4	4 1/2	6	550	900	18	24	\$ 570.00
20	4	5 1/4	7	475	1,200	20	26	\$ 700.00
22	2	7 1/2	8 1/4	425	1,850	23	30	\$ 750.00
30	4	6 1/2	7	450	2,050	21	30	\$ 940.00
35	3	7 1/2	8 1/4	425	2,500	23	34	\$1,170.00
40	6	5 1/4	7	550	1,800	20	28	\$1,050.00
45	4	7 1/2	8 1/4	425	3,400	23	36	\$1,500.00
50	3	8 1/2	10 1/2	400	4,200	26	38	\$1,900.00
70	6	7 1/2	8 1/4	425	4,500	23	40	\$2,250.00
75	4	8 1/2	10 1/2	400	6,000	26	42	\$2,400.00

VULCAN ENGINE WORKS, 1827 Bainbridge St., Philadelphia, Pa.



Fastest *Displacement* Model

30' x 5' 10" Family Runabout—Guaranteed 30 m. p. h.

LET'S take a little demonstration ride. First notice the beautiful mahogany woodwork, all screw fastened and wood plugged with grain matching the planks. The paneled gray or buff decks contrast richly with the mahogany. Notice the graceful flare forward, the distinctive flush hatches, specially designed fittings, electric lights and Klaxon horn, all nickel plated. Under the hatches you find Van Blerck's six-cylinder, $5\frac{1}{2}$ x 6 in., 100 H. P., \$2,000 motor with electric starter and lighting system.

You sit down on the driver's seat—three men can sit here comfortably. Before you is the mahogany bulkhead with nickel-plated fixtures, oil pressure gauge, Ever Ready Tachometer and Bosch dual coil. The auto type steering wheel is nickel plated too.

With a touch of the button the electric starter spins the motor. Take the wheel yourself, advance the throttle and engage the clutch. Soon we are clipping off 33 miles per hour. Behind is a bubbly smooth wake; to the side, aft of amidships, the white spray hisses. At speed the bow lifts clear so the water breaks far aft, and the under section throws the spray outward (not up), and the wind can't blow spray inboard.

Thirty miles an hour in a good staunch boat is a mighty good performance. Notice the absence of vibration. Turn sharply to starboard, leaving the throttle open—she heels in only slightly. Slam through the rollers of that passing steamer; with your eyes shut you wouldn't realize there were any waves. Rough water is fun with this boat.

Now try the aft seat and examine the mahogany interior work closely. If your lady is along you may as well commence to figure out your bank roll. Ladies are delighted with this boat—it is so clean, dry and comfortable. The price, complete, is \$3800; automobile top, \$100 extra. Without electric starter and lighting system, tachometer and horn, but substituting a safety rear starter, the price is \$3500.

32 ft. type with 8 cylinder Van Blerck motor is guaranteed at 35 m. p. h.
 26 " " " 4 " " " " " " " 27 " " "

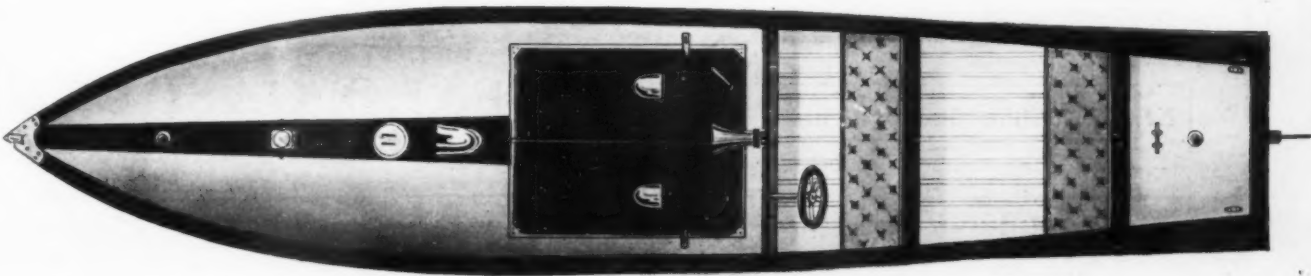
We have a dandy 16-footer for the young folks, guaranteed 20 m.p.h. for \$500

Remember a Hacker guarantee is safe as the bank and always exceeded. With the records of Oregon Kid, Kitty Hawks, II-V, Jr., etc., fresh in your mind,—who do you think is the man to build your 1914 hydroplanes?

Don't write for plans or K. D. frames,—we don't sell them. When writing, state what type of speed boat interests you. Don't delay.

Mr. Hacker and Mr. Tripp will be in the Van Blerck booth frequently during the New York Show.

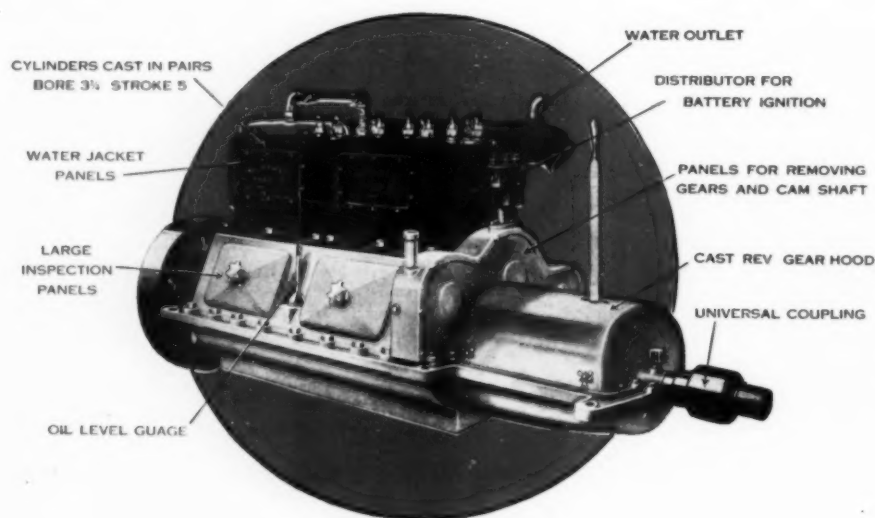
John L. Hacker Boat Co., P. O. Box 530, **Albany, N. Y.**



When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

Building 100 Of The At One Time Cuts 30%

BY building 100 of the new 16-20 h.p. "Buffalos" in one lot we are able to buyer gets the saving. These engines are ready for immediate delivery. demand for an engine of just this size and type which no other machine models--the same reliability and economy of operation. It is the best that brains



"Bu"
The Engine of

The New
Cylinders—Four. Bore—3 1/2 ins.
Speed—

COOLING SYSTEM—Water pump, bronze, rotary type. Water enters cylinders directly around the valves, leaving cylinders at top at opposite side.

LUBRICATION—Constant level splash system. Large capacity rotary oil pump forcing a stream of oil on all four crank pins.

CARBURETOR—1 1/4 inch Schebler

VALVES—All valves enclosed. Made with nickel-steel heads, poppet type. Valve springs and push rods enclosed. Accessible by means of a large panel.

IGNITION—High tension, double system including Bosch high tension magneto and separate distributor system.

STARTING DEVICE—Sprocket and chain, rear starter or electric starter can be supplied.

BASE—Aluminum. Contains the crank shaft bearings made from high-grade babbitt, die cast and removable. The base is of the regular "Buffalo" solid extension type.

CRANK SHAFT—Drop forged steel, pins and bearings ground.

FLYWHEEL—Bolted to flange integral with crank shaft.

New York Show, Jan. 31-Feb. 7

BUFFALO GASOLENE
1274-1286 NIAGARA ST.,

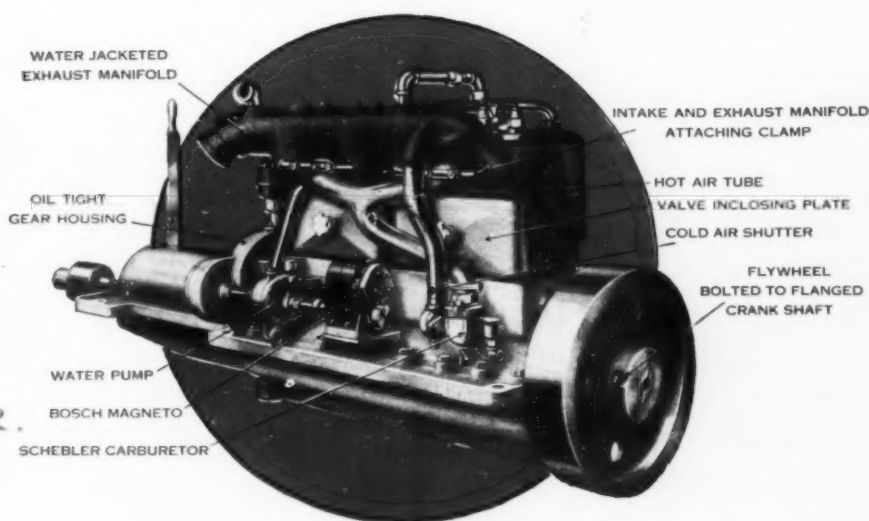
New 16-20 h.p. "Buffalos"

Off The Cost To You!

sell them for 30% less than if we built them one or two at a time. The We are producing a large quantity of them because we know there is a meets. Remember, this engine has the same high quality as other "Buffalo" and money can produce, but the price is reduced by quantity production.

Buffalo

Constant Service.



16-20 H. P.

Stroke—5 ins. Weight—550 lbs.
800 R. P. M.

EXHAUST MANIFOLD—Water jacketed. Attached to cylinders by drop forged clamps.

CAMS AND SHAFT—Steel, hardened and ground. Cams are attached by taper pins. Cam shaft is removable and runs in three bronze bearings.

REVERSE GEAR—Joe's reverse gear. Multiple disc.

CYLINDERS—"L" type. Cast in pairs from close-grained grey iron. Large water jacket panels on side for cleaning.

PISTONS—Made of grey iron. Four rings to each cylinder and all located above the piston pin. The pins are steel, case hardened and ground and clamped by the connecting rod and oscillating in the piston.

CRANK CASE—Has large panels held securely by clamp wing nut.

GEARS—All valve, timer and oiler pump gears enclosed in oil-tight case. Idle gear adjustable for wear to valve time gears.

CONNECTING RODS—Drop forged steel. The bearings for crank are of the die cast type with steel liners for adjustment of wear.

MOTOR COMPANY
BUFFALO, N. Y.

Write for Booklet



Scripps Motors are made in 1, 2, 4 and 6 cylinder sizes. Medium and Extra Heavy Duty Types.

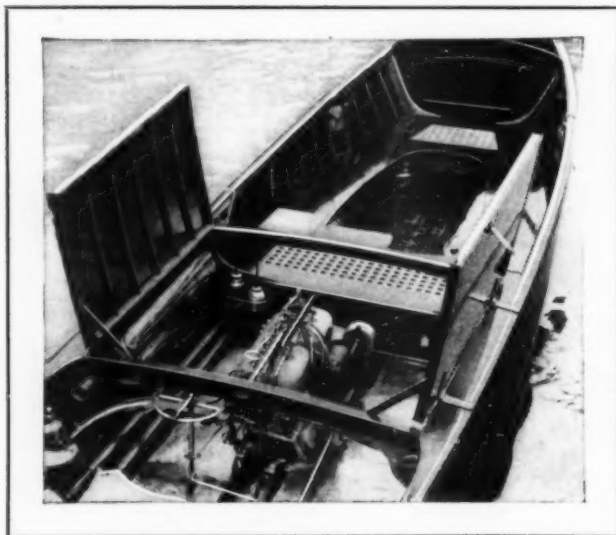


Photo of a Midget installation in modern yacht tender



Send for catalogue and information about Starters and Kerosene Motors.

YOU WON'T FIDGET WITH A "MIDGET"

YACHT OWNERS know, too well, how difficult it has been to get suitable, efficient motors for tenders, dingies and small boats. For this reason, the Scripps Motor Company, early in 1912, decided to add to their line a miniature power plant, designed and built wholly for this purpose—an engine of high grade construction, equipped with all modern

accessories, such as starter, magneto, control mechanism—a 4-cylinder, 4-cycle, 7-horse power motor, weighing only 200 lbs., known as the "Scripps Midget."

As was expected, it met with the widest approval—it filled a long-felt want.

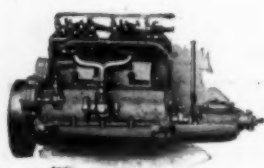
Its beautiful finish—its absence of exposed working parts, its small size and weight, combined with its powerfulness and easy starting qualities, make it a perfect, reliable motive power.

Price, complete with all accessories, starter, reverse gear, shaft and propeller, \$500 f. o. b. Detroit.

SCRIPPS MOTOR COMPANY

631 LINCOLN AVENUE

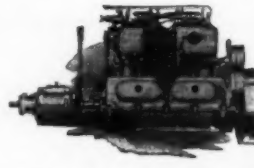
DETROIT, MICHIGAN



Port side of Midget showing enclosed valves

SCRIPPS MOTORS ARE CARRIED IN STOCK BY
 New York.....Bowler, Holmes & Hecker Co., 141 Liberty Street
 Chicago, Ill.....O. L. Cosgrove & Co., 215-219 Englewood Ave.
 Philadelphia.....W. E. Gochenaur, 631 Arch Street
 St. Louis, Mo.....Chas. J. Pettit, 1860 N. Market Street
 Jacksonville, Fla.....Gibbs Gas Engine Co., Foot of Main Street
 Seattle, Wash.....S. B. V. Miller, 72 Marion Street
 San Francisco, Cal.....Ellery Arms Co., 583-5 Market Street
 Los Angeles, Cal.....Marine Engine & Supply Co., 109 East 7th St.
 Duluth, Minn.....Kelley Hardware Co., 118-120 W. Superior St.
 Toronto, Ont.....Schofield-Holden Machine Co., 2 Carlow Avenue
 Winnipeg, Man.....D. A. Ross.
 New Orleans, La.....Arthur Duvic, 130 Chartres Street

(EXPORT OFFICE: 17, Battery Place, New York City)



Starboard side of Midget showing magneto and crank case inspection plates

E. J. WILLIS CO.

85 Chambers Street

New York City





The Old Way and the Right Way



Follow the line of arrows—this shows the course of the escaping gas. This means imperfect compression and lost power. Through these openings oil gets up into the combustion chamber causing carbonization. You can't prevent this with the old-style, one-piece piston rings. Use Leak-Proof Piston Rings.

Follow the line of arrows here—this shows the course of the gas seeking outlet—but it can't get through solid metal. Leak-Proof Piston Rings make leakage of gas between piston heads and cylinder impossible. Gas can't escape down—oil can't go up.

TRADE-MARK-REGISTERED



Made in All Sizes Easily Adjusted

Piston Rings

Are made in two pieces so that each section seals the opening in the other. (See cut.)

No more than two pieces for strength and ease of adjustment and because no more are necessary to perfect leak-proofness. Concentric, interlocking and opposing to obtain equal tension on the cylinder wall.

Constructed on the angle-iron principle for its wonderful strength.

Made of Processed Gray Iron to ensure life and continued elasticity. This special metal is softer than the cylinder—won't mar the smoothness of the cylinder walls—yet is as lasting as the motor.

SEND FOR FREE BOOKLET—Tells you all about Leak-Proof Piston Rings and why it will pay you to use them. Send for it—it's free.

"Ask the User"

MANUFACTURED BY
McQuay-Norris Mfg. Co.
Dept. B St. Louis, Mo.

Sold by all up-to-date dealers, garages, marine stores and repair shops.

BRANCH OFFICES

New York—53 Lincoln Sq. Ct., Chicago—Suite 39, 106 No. La Salle St.
B'way, at 64th St. San Francisco—164 Hansford Bldg.
Pittsburgh—7630 Toga St. Los Angeles—224 Central Bldg.
Kansas City—1504 Grand Ave.
Canada—W. H. Bamfield & Sons, 120 Adelaide Street West, Toronto.

If it's not a 2-piece ring it's not a **Leak-Proof** Ring



IN THE MOTOR BOAT

THE peculiar fire danger in motor boats can be overcome in only one way—by the

Pyrene

FIRE EXTINGUISHER

Pyrene is designed for the inaccessible gasoline or oil fire.

Approved by the United States Steamboat Inspection Service. Included in the lists of approved fire appliances issued by the National Board of Fire Underwriters. No other quart size extinguisher has ever secured this endorsement.

WRITE FOR BOOKLET.

PYRENE MANUFACTURING COMPANY

1358 Broadway, New York City

Atlanta Baltimore Boston Buffalo Chicago Dayton Denver Louisville Memphis
Norfolk Oklahoma City Pittsburgh Philadelphia St. Louis San Antonio York, Neb.
Pacific Coast Distributors: **GORHAM FIRE APPARATUS CO.**
San Francisco Los Angeles Seattle

Mr. Manufacturer:—Are you one of the few not using

STAR THRUST BALL BEARINGS

in your Motors? If you are, you are not receiving the best results. Send us your Blue Prints.



The Star Ball Retainer Company

Lancaster, Pa.

BE YOUR OWN BOAT BUILDER

or let us build it for you with a small additional expense. Our complete, up-to-date factory reduces the cost of production to a minimum. We build all sizes, from 9 ft. Dinghy to 60 ft. Cruiser. This illustration represents one of our latest creations. Will furnish this with or without engine installed. Should you have some spare time, we would advise you to send for our frames and put them together yourself and thereby save 75% of cost. The illustration of frame applies to our models from 18 to 40 ft. cruisers. Other special designs submitted if desired. Send for further information and catalog and special quotations.



Pioneer Boat & Pattern Works, Wharf 15, Bay City, Mich.

SPECIAL OFFER

We have a Special Offer of great interest to every motor boatman or yacht owner in the country.

TRIMOUNT ROTARY POWER WHISTLE

A high class signal for all sizes and classes of boats, including two whistles, fog horn and bronze air compressor.

This Special Offer is for immediate acceptance only. Write today for full information

N.Y. Office 303-E. Hudson Terminal Bldg.
PAUL D. LE VENESS, Mgr.



TRIMOUNT ROTARY POWER CO.

152 PEARL ST.,
BOSTON, MASS.

WICKER-KRAFT

Furniture for Yachts, Launches, Canoes



Genuine Wicker-Kraft furniture adds a touch of refinement, elegance and comfort to every boat. Durable, water-proof, well made and comparatively inexpensive, the finest wicker yacht furniture made.

Wicker-Kraft Chairs, fitted with life belts, have won the approval of discriminating yachtsmen everywhere.

Write today for complete catalog.

**WICKER-KRAFT COMPANY, 15 SOUTH WATER STREET
NEWBURGH 11 NEW YORK**

MOTOR BOAT TOPS



Something new and classy.

Different from the tops usually found on the market in point of *Material, Style and Finish*. Send at once for our catalog of *Motor Boat Tops, Life Preserver Pillows, Cushions, etc.*

THE C. Z. KROH MFG. CO.
1213 JACKSON AVE. TOLEDO, OHIO

IDEALIZING IN MOTOR BOAT CONSTRUCTION

For some years we have quietly gone about our work in the construction of what we believe are the finest motor boats in the world. We do not believe we are exaggerating when we make this statement, because X-celo Runabouts have attributes which the average boat builder cannot even contemplate.

Imagine a wondrously graceful hull, propelled by a magnificent, powerful and silent motor. Imagine yourself reclining upon luxurious upholstery within a mahogany-built motor boat.

Picture further the touching of a button which electrically starts the motor and sends your craft dashing 20 miles—30 miles—even 40 miles an hour, over the waves.

Picture all this and you have a faint idea of a

X-CELO Runabout

We do not construct boats to a price. We design them first and then think of cost. The mottoes of our Designing Department are seaworthiness, durability, grace, silence, luxury and speed.

Yet, when considering all the exclusive features of X-celo Runabouts, they are the least expensive motor-boats built. Descriptive folder describing these wonderful craft will be sent upon request.

Milwaukee Yacht & Boat Company

Designers and Builders of

X-CELO Runabouts and X-CELO Cruisers

405 BECHER STREET

MILWAUKEE, WIS.

"See us at the Chicago Show."



When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

15c each at
Motor Boat
Show



25c each at stores
5c extra by mail

Established
1896

Chas. E. Miller

Pioneer Jobber
97-103 Reade St., New York City

THE LARGEST AUTOMOBILE SUPPLY HOUSE IN AMERICA

15c Each

TO introduce our 1914 Miller GUARANTEED Porcelain Spark Plug at our Exhibit at the Motor Boat Show to be held at Madison Square Garden, Jan. 31st to Feb. 7th, SPACE No. 54, ELEVATED PLATFORM, we will sell this plug at 15c each. Not more than six plugs sold to anyone at this price.

25c Each

AT OUR
BRANCH STORES
5c EXTRA BY MAIL

This Plug Is Absolutely Guaranteed. We Are Selling It at This Very Low Price to Introduce It and Are Charging This to Advertising.

Our 1914 Annual Catalog will be mailed to anyone on request. As the circulation is limited to 100,000 write for same at once. First come, first served.

CHAS. E. MILLER

MANUFACTURER, JOBBER
EXPORTER and IMPORTER

Established
1896

Home Office: 97-99-101-103
Reade Street, New York City

METROPOLITAN BRANCHES:

N. Y. City, 2782 Broadway, at 107th St.
N. Y. City, 924 8th Ave., bet. 54th and 55th Sts.

Brooklyn, 1421 Bedford Avenue
Newark, N. J., 274 Halsey Street

OTHER BRANCHES:

Buffalo

Hartford

Cleveland

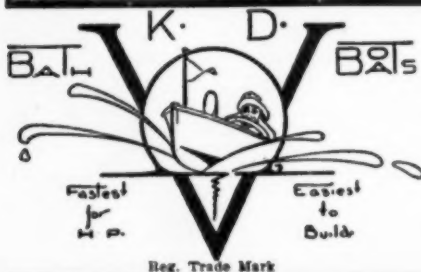
Philadelphia

Detroit

Atlanta

Boston

Springfield
New Orleans



10 Per Cent. Discount

on all orders placed during this month. Thousands of successful boats have been built by amateurs from our plans, but, our full size pattern or knock downs cut out practically all difficult work. Our system, now largely copied, requires no moulds or false work, no steam bending or difficult fitting.

Send stamp for 40 page catalogue. Giving designs, prices, etc.

Bath Marine Construction Company

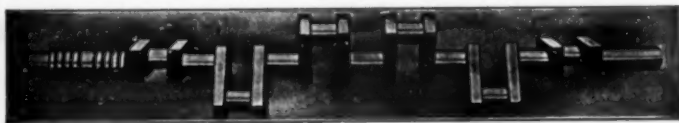
Henry Douglas Bacon, Managing Owner Washington Street, Bath, Maine



WE WOULD ESTEEM IT A PRIVILEGE TO ANSWER ANY QUESTIONS THAT MAY ARISE IN REGARD TO

JEFFERY'S MARINE GLUE

L. W. FERDINAND & COMPANY, 201 South Street, BOSTON, MASS., U. S. A.



Write today for quotation of your requirements.

FINISHED CRANK SHAFTS

Let us figure on your Crank Shafts (be it one or one thousand). We manufacture them complete in our own plant—forged from the solid billet, grinding all pins and bearings and supply the finished shaft ready to be installed in the engine.

Forgings of all kinds. Die forgings in quantities from 50 and up. Carbon and Alloy Steels Heat Treated to your own specifications. Drop Forged Cranks Finished.

P. H. GILL & SONS, FORGE AND MACHINE WORKS, BROOKLYN, N. Y.



Genuine Harthan Propellers. Shaft Bearings.
Universal Joints, Propeller Jacks, Shaft Couplings

ALL FIRST-CLASS GOODS MANUFACTURED BY
McFARLAND FOUNDRY & MACHINE CO.,

No. 1 BREUNIG AVENUE
TRENTON, N. J.

BOSTON
The Lincoln-Dillaway Co.
178 Commercial St.

REPRESENTATIVES:
NEW YORK
Topping Brothers
123 Chambers St.

PHILADELPHIA
F. Vanderhorst's Sons
7 North Water St.

CANADA—Canadian Fairbanks-Morse Co., Montreal and branches.



A. R. Mosler & Co.'s Spark Plug Patent Sustained

WARNING!

The United States Circuit Court of Appeals Upholds Our Canfield Patent

This decision covers both the petticoat and the conical type of spark plugs having a recess deeper than its diameter around the electrode; which feature is found in all the best-known spark plugs now on the market.

Every party who manufactures such spark plugs without being licensed to do so under this Canfield Patent, and every party who sells or uses such spark plugs not manufactured by us or by any party licensed to sell them under this Canfield Patent, will infringe this Canfield Patent, and be liable to a suit in equity for damages and an injunction.

Since the Circuit Court of Appeals confirmed the validity of this patent, we have given a great deal of thought and consideration to the future spark plug business, as our ownership of this patent may affect it.

The keynote of our policy with respect to the manufacturers and dealers in spark plugs, was fully described in a previous issue of this paper.

It gives us pleasure to state that the following leading manufacturers of spark plugs have been licensed by us under this Canfield Patent:

A. R. Mosler & Co., Mt. Vernon, N. Y.
Auburn Ignition Mfg. Co., Auburn, N. Y.
Benford Mfg. Co., Mt. Vernon, N. Y.
L. F. Benton, Vergennes, Vt.
Belvidere Screw & Machine Co., Belvidere, Ill.
Bigsby Mfg. Co., Cleveland, O.
Bosch Magneto Co., New York
The Brown Co., Syracuse, N. Y.
Champion Ignition Co., Flint, Mich.
Champion Spark Plug Co., Toledo, O.
Frontier Specialty Co., Buffalo, N. Y.
Emil Grossman Mfg. Co., Inc., Brooklyn, N. Y.
Hartford Machine Screw Co., Hartford, Conn.
Herz & Co., New York
Jefte. y-Dewitt Co., Detroit, Mich.

Lockwood-Ash Motor Co., Jackson, Mich.
C. A. Metzger, Inc., New York City
New York Mica & Mfg. Co., Auburn, N. Y.
Oakes & Dow, Boston, Mass.
Pittsfield Spark Coil Co., Dalton, Mass.
Rajah Auto Supply Co., Bloomfield, N. J.
Reflex Ignition Co., Cleveland, O.
Rex Ignition Mfg. Co., New York, N. Y.
Sharp Spark Plug Co., Cleveland, O.
Silvex Co., New York City
Splitdorf Electrical Co., Newark, N. J.
Star Specialty Mfg. Co., Chicago, Ill.
Standard Co., Torrington, Conn.
E. Q. Williams, Syracuse, N. Y.
V-Ray Co., Marshalltown, Ia.

A. R. Mosler & Co.

Sole Owners of the Canfield Patent

New York, N. Y.

January 15, 1914.



Those who get most out of life are down in Florida in a MATHIS-BUILT HOUSEBOAT

The most delightful way to enjoy a Florida winter. Specially designed for traversing inland waterways, yet offering more comfortable quarters than are possible on a deep-sea cruiser.

The Mathis Fleet Includes:

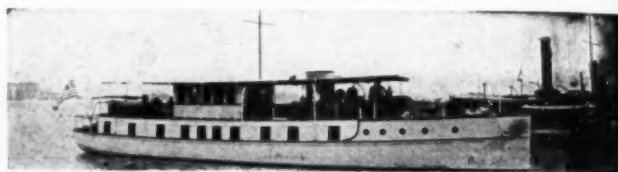
70-ft. LUNARIA 70-ft. COCOPOMELO 90-ft. EDNADA III 77-ft. LODONA 70-ft. LANAI 70-ft. IBIS

Ideal types of pleasure craft—moderate in initial cost and economical when in commission. Full details on request.

MATHIS YACHT BUILDING CO.

Specialists in 60 to 100-ft. Houseboats and Cruisers

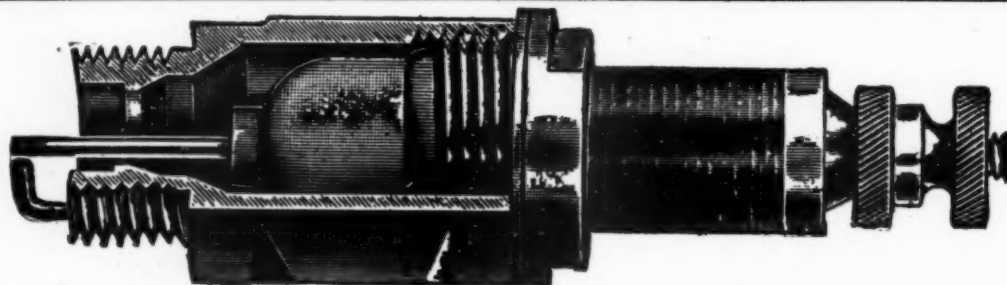
COOPER'S POINT CAMDEN, N. J.



THE HILDEBRET—B. F. KEITH, Owner

Formerly known as the NAHMEOKA and owned by H. N. Baruch. 95 ft. with 18 ft. 6 in. beam and 3 ft. 3 in. draught. Speed 15 miles per hour.

COMET



SOOTLESS

COMET AND SOOTLESS SPARK PLUGS

MANUFACTURED BY

The Oakes & Dow Co., 15 Chardon St., Boston, Mass.

The MIGHTY MERCURY Drove GUNFIRE Jr.

This is the Mighty Mercury 52 H.P. Special which drove the 20-ft. hydroplane Gunfire Jr., through its long list of records during 1913—one of the most successful racing seasons ever enjoyed by any boat or its owner. Ten firsts, one second, one fourth (broken propeller), and several records in hydroplane and displacement classes and free-for-all races.

The 52 H.P. Special has 5 1/4" bore, by 5" stroke. For power, flexibility, durability, smoothness and reliability, it is ideal for racers, cruisers and work boats.

Die cast bearings and every bearing surface is uniformly larger than the corresponding bearing of any other motor. 2 3/4" valves, both inlet and exhaust. Capacious water jacket.

Reverse gear bed cast integral, with lower half of crank case. Paragon special reverse gear, with positive reverse lever lock, eliminating ringing and rattling noises.

Positive lubrication to every friction point. Becker imported Hollow steel wrist pins.

Write today for the Mercury Book.

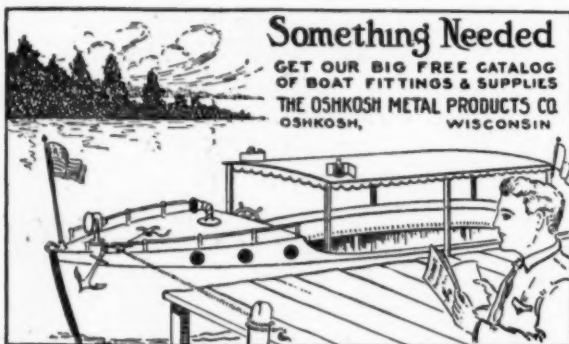
Two New Models. 6 1/2-in. Bore x 7-in. Stroke.

4 Cylinder—125 Horsepower.

8 Cylinder—250 Horsepower



MERCURY MOTOR CO., Produce Exchange New York



Something Needed

GET OUR BIG FREE CATALOG
OF BOAT FITTINGS & SUPPLIES
THE OSHKOSH METAL PRODUCTS CO.
OSHKOSH, WISCONSIN

Sell Your Old Engine in the Market Place

Motor Boating's Market Place columns offer the buyer and seller of used motor boats, fittings, etc., a quick and convenient medium of exchange.

If you are getting a new boat or a new engine, and wish to sell the old one, don't have it rotting, or rusting or collecting storage charges—sell it—in the Market Place.

Perhaps you have waterfront property suitable for a yacht club, or for individual yachting enthusiasts—the Market Place goes to over 25,000 individuals interested in all things pertaining to the water.

Try this Market—it is resultful.

MOTOR BOATING

119 West 40th Street New York City
J. S. Hildreth, Adv. Mgr.

Thorobred

2 Models

24-32 H. P.

32-40 H. P.

4 Cyl.

4 Cyc.

Marine

PRICE
\$250

Model C

Bore 4 1-16 in.

Stroke 4 1-2 in.

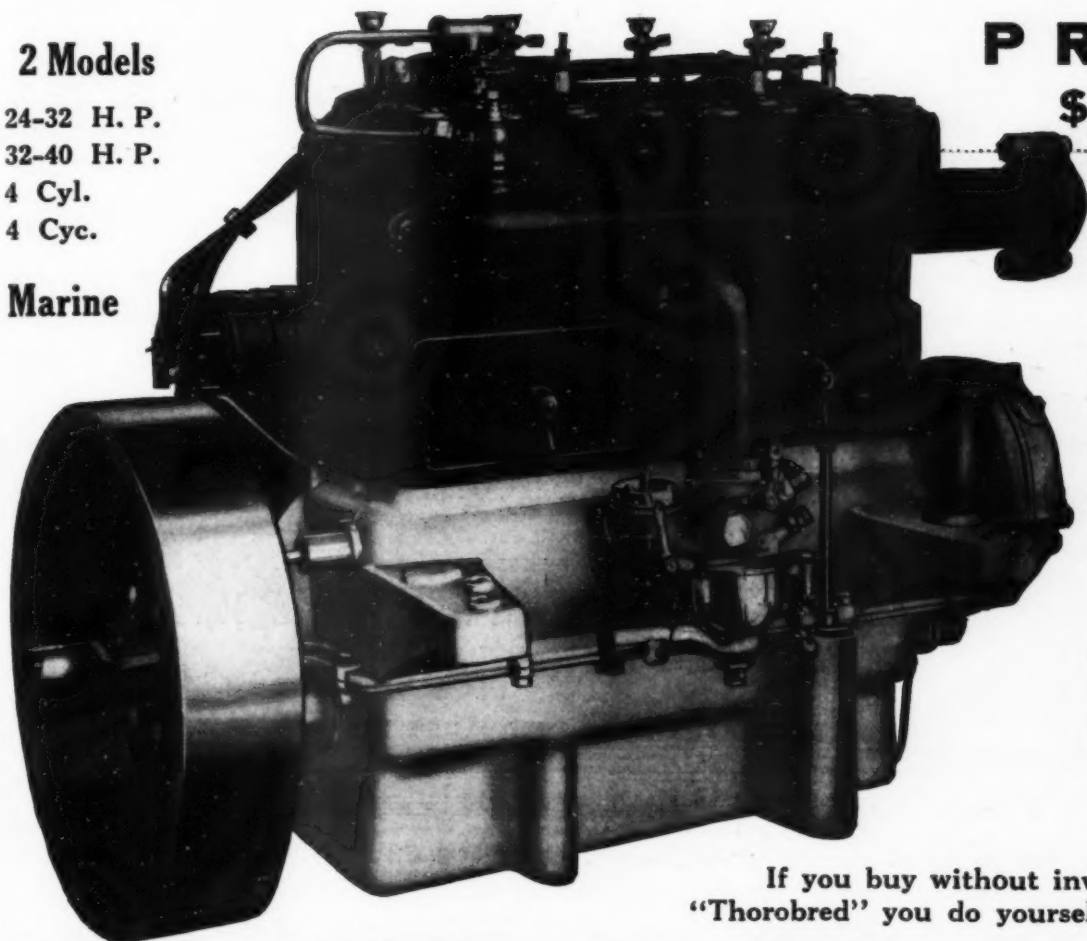
Weight 390 lbs.

Model B

Bore 4 1-2 in.

Stroke 5 in.

Weight 475 lbs.



If you buy without investigating the
"Thorobred" you do yourself an injustice

ANYWHERE IN THE WORLD

Berlin
Christiania
Montreal

Hamburg
Russia
Winnipeg

Finland
England
Vancouver

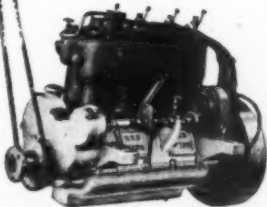
—Or in "OUR OWN UNITED STATES"—Anywhere, and no matter where, you are located, your boat builder can supply you in a type to suit your needs. In this day of good engines, manufactured upon scientific principles by competent and reliable builders, a motor can attract special attention and become a leader *only by real merit*. The "Thorobred" combines the very best engineering principles and the highest development of manufacturing. And that is why it is the Marine Sensation of 1914. We have accomplished what others have tried for: a perfect 4-cycle MARINE power plant "with power to spare" at a price made possible by quantity manufacture with the most approved automatic machines and methods. "Thorobreds" are being shipped to all parts of the world. The past few days brought us orders from Hamburg, Berlin, Christiania, Norway, Russia, Finland, Vancouver, Winnipeg and Montreal. We're building "Thorobreds" to the capacity of our big plant. That's why we sell it at a price that would bankrupt a smaller concern.

Red Wing Rear Starter Steerer and Controls



\$30
complete

Easily
attached
to any
motor.



ANNOUNCEMENT

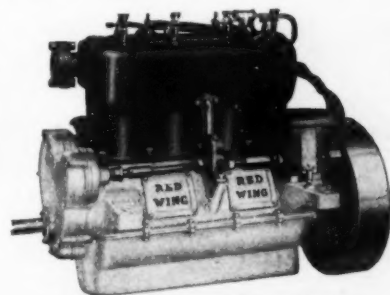
We have had so many requests for a motor of more power, with "Thorobred" excellence, that we have brought out the "Model B Thorobred." Bore 4 1/2 inches, stroke 5 inches, 32-40 H. P. Price \$350.

Visit us at
the Motor Boat Shows
Chicago and Toronto

RED WING MOTOR CO.

Dept. B Red Wing, Minn.

BUILDERS AND DEALERS: WRITE FOR TERRITORY



Thorobred—Hand Holeplate Side

THE JOHNSON MARINE REVERSE GEAR

IN A NEW TYPE FOR

COMPACT AND NEAT

ENCASED BUT ACCESSIBLE

TELLS THE STORY

See our Exhibit of Reverse Gears and the Bud-E Marine Motor at the New York and Chicago Motor Boat Shows.



1914, FROM 1 TO 30 H. P.
MODELS "E" AND "F"

SILENT AND POWERFUL

JOHNSON AND QUALITY

Guaranteed for ONE YEAR

Our No. 0 and No. 2 size gears will be made as a New Ball Bearing Design known as the Model "F" for 1914.

THE CARLYLE JOHNSON MACHINE CO. MANCHESTER CONN

HENRICKS Magnetos and Lighting Outfits

THE
COMET

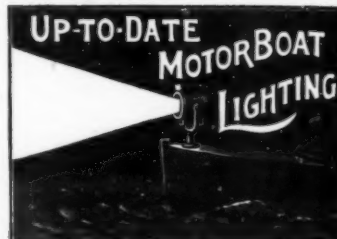


are guaranteed to be highly
POWERFUL, DURABLE and RELIABLE

Regarding the popularity of the "Henricks" we state that there are 50,000 Now in Service! Any user will be glad to explain their superiority.

Write us or see your dealer. Do not fail to see our exhibit with the E. J. Willis Company at the Motor Boat Show.

HENRICKS NOVELTY COMPANY
1255 St. Paul Street :: :: INDIANAPOLIS, IND.



RALACO
THE SILENT
SIMPLIFIED ENGINE

High grade in the extreme, clean, cool, quiet and dependable. A fuel consumption of one-tenth of a gallon of gasoline per horse power hour.

THE S. M. JONES COMPANY

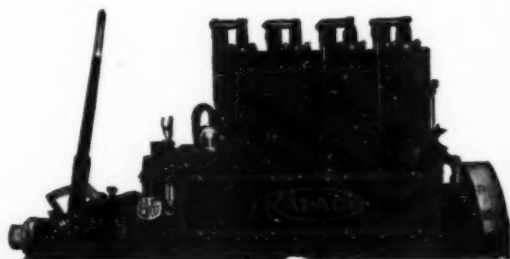
Main Office and Factory: 616 SEGUR AVE., TOLEDO, O.

New York Office, 136 Liberty Street.

AGENTS:

Wm. N. Jarvis & Co., The Bourse, Philadelphia, Pa. A. W. LePage Gasoline Eng. & Supply Co., Vancouver, B. C.

The great number of satisfied owners of **RALACO Engines** is rapidly increasing, owing to the general satisfaction given by ALL of them.



PUT THE POWER OF NIAGARA

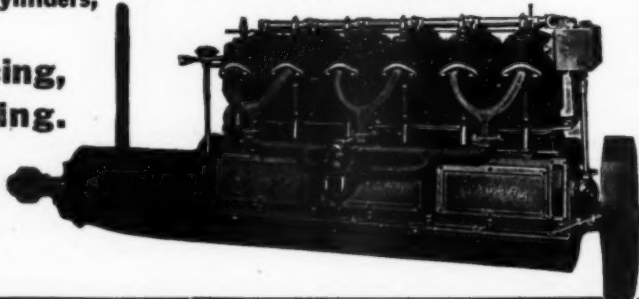
Four Cycle, in 2, 4 and 6 Cylinders,
5 to 100 H. P.

For Cruising, Racing,
Fishing, Freighting.

75% of Niagara Sales due to
Satisfactory Service.

Niagara Motors will Operate
on Kerosene or Gasoline.

In Your Boat

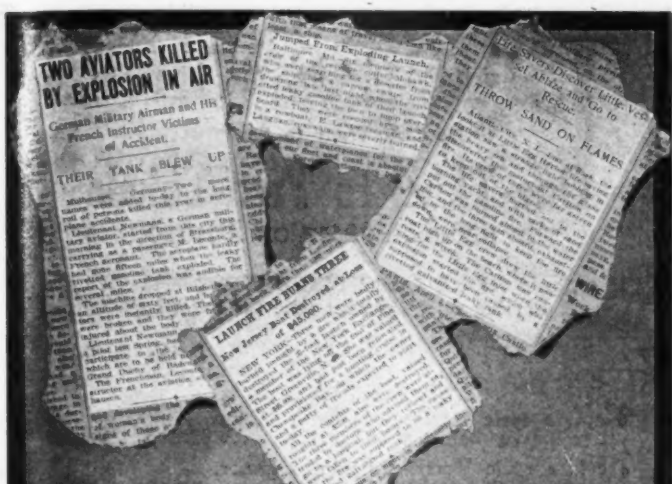


Highest Quality at
Moderate Price.

In Service Nearly Ten Years
and Not a Dissatisfied
Customer.

We can save you money and much
annoyance. Get Catalog.

Niagara Motors & Mfg. Co., Inc.
194-204 Niagara Boulevard - Dunkirk, N. Y.



AVOID ACCIDENTS LIKE THESE
By Equipping Your Motor Boat or Motor Car With

THE "JASCO TANK"
A Seamless, Leakless, Drawn Steel Gasoline Receptacle

JANNEY, STEINMETZ & CO.
Main Office: Philada., Pa. New York Office: Hudson Terminal Bldg.

Kahlenberg MARINE MOTORS

WHAT IS THE BEST MOTOR?

"The Kahlenberg," do you expect us to say? Yes, we honestly think so, and we also feel that you will think so when you know as much about it as we do. If you use a marine motor or ever expect to use or buy one, you should know all the exclusive, superior features of the

Kahlenberg

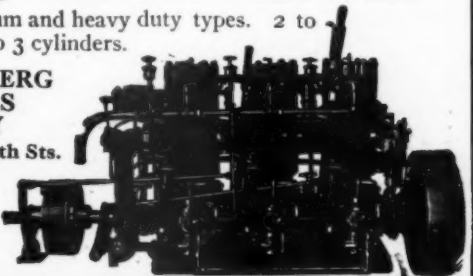
This motor reverses from full speed ahead to full speed astern like a steam engine. It burns kerosene, distillate, or benzine for fuel just as well as gasoline and consumes less than one pint of fuel per h.p. per hour. Self starting. When running on light load you can cut out one or more cylinders if desired.

Kahlenberg Motors have made good in all lines of hard work. They give satisfaction where others fall down.

Made in medium and heavy duty types. 2 to 85 H. P. 1 to 3 cylinders.

KAHLENBERG BROTHERS COMPANY

Monroe & 12th Sts.
Two Rivers,
Wis.,
U.S.A.



A 2 Cylinder Rowboat Motor

HERE'S the latest and finest thing in rowboat motors—the ONLY 2-cylinder detachable rowboat motor made. Beats anything on the market. It's a REAL engine. Powerful and fast—quiet and smooth running. Has full 3 H.P. and reverses easily.

KOBAN ROWBOAT MOTOR

The Koban Motor overcomes vibration, which has been the biggest objection against rowboat motoring. It is perfectly balanced and does not shake the boat. Fits any rowboat—can be attached or detached in a jiffy—absolutely weedless rudder and propeller—sure and easy starter—can be steered when engine is shut off. If you are going to buy a rowboat motor, this is the one you want—price, \$75. Agents wanted.

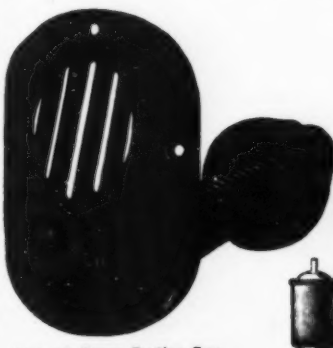


KOBAN MFG. CO.

246 South Water St., Milwaukee, Wis.

IF YOU REALLY

desire to get more power out of your engines equip them with Monarch Auxiliary Air Valves and Monarch Special Carbureters. A Monarch Pump Suction Connection and Strainer may save your engine or boat.



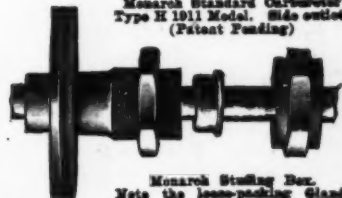
Monarch Pump Suction Connection with Strainer.



Monarch Auxiliary Air Valve.
Will increase the power of your two-cycle engine.



Monarch Standard Carburetor Type H 1911 Model. Side outlet. (Patent Pending)



Monarch Stuffing Box. Note the loose-packing Gland.

Monarch Goods are Guaranteed not for 30 days, but until they are worn out. Unless Vertical Carbureters are specified, all Carbureters are shipped Horizontal Pattern. Other Specialties offered from time to time. Full information for the asking.

MONARCH VALVE CO., 112 Front St., Brooklyn, N.Y., U.S.A.

Member { National Association of Boat and Engine Builders
{ Marine Supplies Association of America



**STANDARD
GAS ENGINE COMPANY**
SAN FRANCISCO, CAL.
Established 1901
**MAKERS OF THE
"FRISCO STANDARD"
MARINE ENGINES**
**THE MOST RELIABLE, DURABLE AND
ACCESSIBLE ENGINE MADE**

Standard Engines deliver most power for bore and stroke.

Standard Engines have lowest fuel consumption because they have no side pockets in the combustion chambers.

Standard Engines have no cams or gearing in the crank pit where it is difficult to reach and make repairs and adjustments.

Standard Engines have a very serviceable igniter that rarely gives trouble.

Standard Engines are built with open or closed base—especially designed so that oil will not splash on walls or floor.

You can learn more about them—what they have done for others and will do for you—their capacity and cost—in our large new and beautiful catalog No. 12 just off the press. Sent on request.

MARINE ENGINES

Do You Want to Save

One-Third to Two-Thirds

THE REGULAR PRICE ON A MOTOR?

If so, send for our Special PRICE WRECKER. We are offering at the present time the following:

	Regular Price	Our Special Price
6 cyl., 4 cycle Herschell-Spillman Motor, 50 h. p., 4" bore x 5" stroke.....	\$600.00	\$275.00
4 cyl., 4 cycle Herschell-Spillman Motor, 40 h. p., 5 1/2" bore x 5 1/4" stroke.....	550.00	275.00
4 cyl., 4 cycle Buda Motor, 35 h. p., 4 5/16" bore x 5" stroke	700.00	300.00
4 cyl., 4 cycle Poss Motor, 25 h. p., 3 1/2" bore x 4 3/4" stroke	400.00	140.00
2 cyl., 2 cycle Reliance Motor, 15-18 h. p., 5 1/8" bore x 5" stroke	400.00	95.00
4 cyl., 4 cycle Lyons-Atlas, 5 1/8" stroke x 4 1/4" bore	510.00	165.00
6 cyl., 4 cycle BROWNELL UNIT POWER PLANT, complete with transmission, 3 1/2" bore x 4" stroke	600.00	225.00

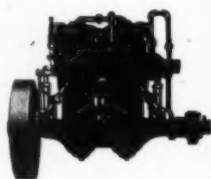
TIMES SQUARE AUTO CO.

S. W. Cor. 56th Street and Broadway New York
1210 Michigan Boulevard - - Chicago

WORLD'S LARGEST DEALERS IN JOBS

KENNEBEC

Gasoline Engines



If you are one who demands full service and reliability from a marine engine, you cannot be better satisfied than by getting a Kennebec. This is an engine which will give you perfect satisfaction for years to come. It will run day after day, year in and year out, with the greatest economy and the least trouble, and you can risk your life on it if necessary, because it won't fail you.

The Kennebec Engine gives thirty to forty per cent. more horse power than its rating. We allow them ample bore and stroke and rate them honestly at moderate speeds, because an engine designed for hard, continuous service like the Kennebec must run at moderate speed if it is to have durability and give permanent satisfaction. We build power into these motors and it has got to come out.

The Kennebec is sturdy and reliable enough for the fisherman who must use it every day, and handsome enough for the finest pleasure boats. Every engine user wants Durability, Economy and Easy Accessibility no matter what type of service he requires. Ask any fisherman what he thinks of the Kennebec. If he has ever seen one working, we know what his answer will be.

14 Models. 2 to 16 H. P. 1 to 3 Cylinders. Two Cycle.

WRITE TODAY FOR CATALOG

TORREY ROLLER BUSHING WORKS
BATH, MAINE, U. S. A.

DEFOE BOATS



A Cruiser Frame ready to take apart and crate for shipment

We manufacture both finished and Knock-Down boats of all sizes for either pleasure purposes or business use.

If you enjoy working with tools and want an open launch, build it with your own hands, starting with one of our K. D. frames. You can build a 25 ft. launch from the K. D. frame and equip it with power for less money than you would have to pay for the cheapest 18 ft. launch on the market.

Experience in boat building is entirely unnecessary. We do the boat builder's part.

With the help of one or two hands, the spare time of the ordinary professional man or mechanic, if put to use during the winter and spring months, is sufficient to build one of our largest cabin cruisers. We send you the hard parts all done. You will have, when completed, as fine a boat as turned out by any factory in the land. You can build a 50 ft. cruiser, and equip it with power, for less money than you would have to pay for the cheapest 30 ft. finished boat on the market.

People of limited means buy these K. D. boats, do the work themselves at spare times and save three-fifths of the cost. People of wealth buy them, hire them finished by local hands in their home city, where they can see every piece of timber that enters the construction, plan every detail of the interior as the work progresses, and yet save half the cost.

Send For Our Free Catalog

Our K. D. boat department gives us unusual advantages in the manufacturing of finished boats also. Give us an opportunity and we will prove to you conclusively that the manufacturer of finished boats only cannot meet our prices on finished boats and still turn out the high grade of work that we do.

We launch from our factory every season some of the finest boats built, and we only ask an opportunity to prove the claims we make.

Send for our catalog and tell us the size and type of boat that you are interested in and whether you wish to build from a K. D. frame or buy the finished boat.



Launched from our factory last season.

DEFOE BOAT AND MOTOR WORKS
4235 State Street BAY CITY, MICH., U. S. A.

AMERICAN

MARINE MOTORS

"Americanize Your Boat"

"Americanized" launches are conspicuous everywhere for the ever-ready, continuous running qualities of their power plants. The great simplicity, correct design and careful construction make it practically impossible for AMERICAN Motors to give anything but absolute satisfaction and efficient, reliable service in every kind of boat.

Burns Kerosene With our American Kerosene Carburetor attached you can use kerosene, the cheapest kind of marine engine fuel. You can also use gasoline, benzine, petrol, distillate, alcohol or naphtha, without change of equipment.

Guaranteed for Life Every AMERICAN Motor carries a life guarantee backed by a half-million dollar company—it is the strongest and most liberal engine guarantee in the world. The AMERICAN is made in all sizes from 2 to 30 H. P. (one to four cylinders)—sold at lowest possible prices. Write for descriptive catalog—FREE.

Agents Wanted

We want more live dealers and agents. Some valuable territory still open. Write for our liberal proposition. Exclusive rights given.

American Engine Co., 410 Boston St., Detroit, Mich.



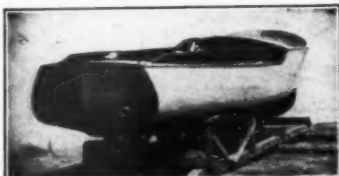
DOYLE "V" BOTTOM

WITH CURVED SIDES

A sturdy, well constructed, handsome boat. Built to withstand the trying conditions along the Atlantic coast.

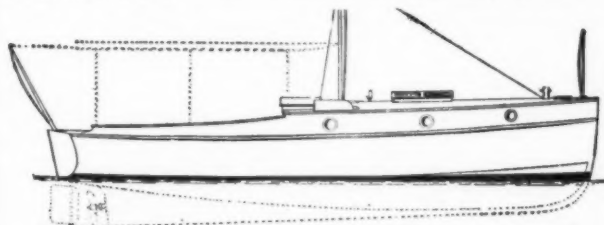
21-FT. RUNABOUT

Beam 5 ft. cedar planking, copper fastenings, oak trim, hackmatack stem, special rabbetted chine, special hackmatack and oak frames, mechanical devices, shaft log, 2 cylinders, 7 h.p. Erd motor, reverse gear, etc. Speed 11 miles per hour. **\$495.**



28-FT. CRUISER.

Beam 8 ft. 4 in., oak frames, cedar planking special rabbetted chine, toilet, lavatory, ice box, galley; plenty of locker space; sleeping cabin; large, self-bailing cockpit; 2 cylinder 14 h.p. Stanley motor, reverse gear, sailing lights, fog horn, whistle, cushions, etc. Speed, 11½ miles per hour. This little craft is extremely well laid out and has the cabin accommodation of the average 33-ft. cruiser. **\$1225.**



K. D. FRAMES & COMPLETED LAUNCHES

SIX MODELS:

18 FT. LAUNCH	23½ FT. AUTO EXPRESS
21 FT. RUNABOUT	26 FT. RUNABOUT
26 FT. HYDROPLANE	28 FT. CRUISER

YOU CAN BUILD ONE

No steam bending. Instructions printed in simple, non-technical language. No moulds to make. Send for Catalogue.

AMERICAN LAUNCH CO., E. 38th St., Bayonne, New Jersey

Baldridge

Reverse Gear

Questions of
Mr. Careful Gear Buyer
No. 5

"Can Reverse Band Bind?"

Steer clear of gears with only one compression cam at top, and those resting on lugs projecting from reverse band. They are sure to bind and cause friction and lessen the gear's efficiency.

"Baldridge" Gears have double cam action and are supported from the bottom by a lug which fits into housing. The reverse band is entirely free from drum, frame and housing—it can't possibly bind or heat, and that means longer life and better service in the "Baldridge."

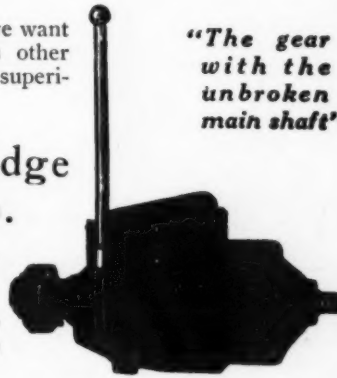
We have a booklet we want you to have. It tells other points of "Baldridge" superiority.

"The gear with the unbroken main shaft"

The Baldridge Gear Co.

678 W. Grand Blvd.
DETROIT, MICH.

Handled in Canada by The
Canadian Fairbanks-Morse
Co., Ltd.



DONT BLAME YOUR MOTOR. GET A

BRYANT & BERRY

PROPELLER

SPEED GUARANTEED

We Guarantee 1 to 3 Miles Per Hour

To Increase the Speed of Your Boat

This is the guarantee we have been making for the past five years, the guarantee under which we have sold thousands of B. & B. propellers. This is your protection and insurance of satisfaction when you buy a B. & B. wheel. You don't have to depend on argument or unfounded claims.

B. & B. propellers give you the highest degree of speed and power your boat and engine are capable of. Their efficiency is as near perfection as it is possible to attain. They reduce the percentage of slip and produce the maximum propelling force for the horsepower used.

The materials and workmanship used in B. & B. wheels are equal in superiority to the design. We use a special bronze as strong as steel. The accuracy and finish are beyond criticism. And in spite of all this, our prices are lower than for any other make of wheel.


When you buy a propeller, get a genuine B. & B.—don't accept a substitute or imitation. Look for the name "Bryant & Berry" stamped on the hub. Certain peculiarities of design make it impossible for copies of our wheels to equal the originals in efficiency.

Do not fail to see the above in E. J. Willis Co. section at the coming Motor Boat Show.

BRYANT & BERRY COMPANY
28 WEST ATWATER ST. DETROIT, MICH.

Washington and Alaska Distributor, S. V. B. Miller, Seattle, Wash.
Canadian Fairbanks-Morse Co., Canadian Sales Agents.

E. J. WILLIS CO. - - - New York Agents



**STANDARD
GAS ENGINE COMPANY**
SAN FRANCISCO, CAL.
Established 1901

MAKERS OF THE
**"FRISCO STANDARD"
MARINE ENGINES**

THE MOST RELIABLE, DURABLE AND
ACCESSIBLE ENGINE MADE

Standard Engines deliver most power for bore and stroke.

Standard Engines have lowest fuel consumption because they have no side pockets in the combustion chambers.

Standard Engines have no cams or gearing in the crank pit where it is difficult to reach and make repairs and adjustments.

Standard Engines have a very serviceable igniter that rarely gives trouble.

Standard Engines are built with open or closed base—especially designed so that oil will not splash on walls or floor.

You can learn more about them—what they have done for others and will do for you—their capacity and cost—in our large new and beautiful catalog No. 12 just off the press. Sent on request.

MARINE ENGINES

Do You Want to Save

One-Third to Two-Thirds

THE REGULAR PRICE ON A MOTOR?

If so, send for our Special PRICE WRECKER. We are offering at the present time the following:

	Regular Price	Our Special Price
6 cyl., 4 cycle Herschell-Spillman Motor, 50 h. p., 4" bore x 5" stroke.....	\$600.00	\$275.00
4 cyl., 4 cycle Herschell-Spillman Motor, 40 h. p., 5½" bore x 5¼" stroke.....	550.00	275.00
4 cyl., 4 cycle Buda Motor, 35 h. p., 4 5/16" bore x 5" stroke	700.00	200.00
4 cyl., 4 cycle Poss Motor, 25 h. p., 3½" bore x 4¾" stroke	400.00	140.00
2 cyl., 2 cycle Reliance Motor, 15-18 h. p., 5½" bore x 5" stroke	400.00	95.00
4 cyl., 4 cycle Lyons-Atlas, 5½" stroke x 4¾" bore	510.00	165.00
6 cyl., 4 cycle BROWNELL UNIT POWER PLANT, complete with transmission, 3½" bore x 4" stroke	600.00	225.00

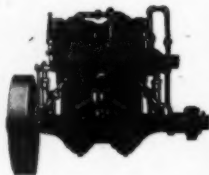
TIMES SQUARE AUTO CO.

S. W. Cor. 56th Street and Broadway New York
1210 Michigan Boulevard - - Chicago

WORLD'S LARGEST DEALERS IN JOBS

KENNEBEC

Gasoline Engines



If you are one who demands full service and reliability from a marine engine, you cannot be better satisfied than by getting a Kennebec. This is an engine which will give you perfect satisfaction for years to come. It will run day after day, year in and year out, with the greatest economy and the least trouble, and you can risk your life on it if necessary, because it won't fail you.

The Kennebec Engine gives thirty to forty per cent. more horse power than its rating. We allow them ample bore and stroke and rate them honestly at moderate speeds, because an engine designed for hard, continuous service like the Kennebec must run at moderate speed if it is to have durability and give permanent satisfaction. We build power into these motors and it has got to come out.

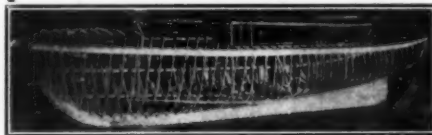
The Kennebec is sturdy and reliable enough for the fisherman who must use it every day, and handsome enough for the finest pleasure boats. Every engine user wants Durability, Economy and Easy Accessibility no matter what type of service he requires. Ask any fisherman what he thinks of the Kennebec. If he has ever seen one working, we know what his answer will be.

14 Models. 2 to 16 H. P. 1 to 3 Cylinders. Two Cycle.

WRITE TODAY FOR CATALOG

TORREY ROLLER BUSHING WORKS
BATH, MAINE, U. S. A.

DEFOE BOATS



A Cruiser Frame ready to take apart and crate for shipment

We manufacture both finished and Knock-Down boats of all sizes for either pleasure purposes or business use.

If you enjoy working with tools and want an open launch, build it with your own hands, starting with one of our K. D. frames. You can build a 25 ft. launch from the K. D. frame and equip it with power for less money than you would have to pay for the cheapest 18 ft. launch on the market.

Experience in boat building is entirely unnecessary. We do the boat builder's part.

With the help of one or two hands, the spare time of the ordinary professional man or mechanic, if put to use during the winter and spring months, is sufficient to build one of our largest cabin cruisers. We send you the hard parts all done. You will have, when completed, as fine a boat as turned out by any factory in the land. You can build a 30 ft. cruiser, and equip it with power, for less money than you would have to pay for the cheapest 30 ft. finished boat on the market.

People of limited means buy these K. D. boats, do the work themselves at spare times and save three-fifths of the cost. People of wealth buy them, hire them finished by local hands in their home city, where they can see every piece of timber that enters the construction, plan every detail of the interior as the work progresses, and yet save half the cost.

Send For Our Free Catalog

Our K. D. boat department gives us unusual advantages in the manufacturing of finished boats also. Give us an opportunity and we will prove to you conclusively that the manufacturer of finished boats only cannot meet our prices on finished boats and still turn out the high grade of work that we do.

We launch from our factory every season some of the finest boats built, and we only ask an opportunity to prove the claims we make.

Send for our catalog and tell us the size and type of boat that you are interested in and whether you wish to build from a K. D. frame or buy the finished boat.



Launched from our factory last season.

DEFOE BOAT AND MOTOR WORKS

4235 State Street

BAY CITY, MICH., U. S. A.

AMERICAN

MARINE MOTORS

"Americanize Your Boat"

"Americanized" launches are conspicuous everywhere for the ever-ready, continuous running qualities of their power plants. The great simplicity, correct design and careful construction make it practically impossible for AMERICAN Motors to give anything but absolute satisfaction and efficient, reliable service in every kind of boat.

Burns Kerosene With our American Kerosene Carburetor attached you can use kerosene, the cheapest kind of marine engine fuel. You can also use gasoline, benzine, petrol, distillate, alcohol or naphtha, without change of equipment.

Guaranteed for Life Every AMERICAN Motor carries a life guarantee backed by a half-million dollar company—it is the strongest and most liberal engine guarantee in the world. The AMERICAN is made in all sizes from 2 to 30 H. P. (one to four cylinders)—sold at lowest possible prices. Write for descriptive catalog—FREE.

Agents Wanted

We want more live dealers and agents. Some valuable territory still open. Write for our liberal proposition. Exclusive rights given.

American Engine Co., 410 Boston St., Detroit, Mich.



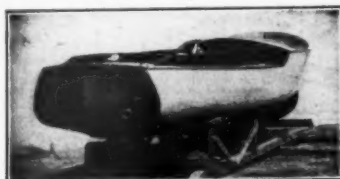
DOYLE "V" BOTTOM

WITH CURVED SIDES

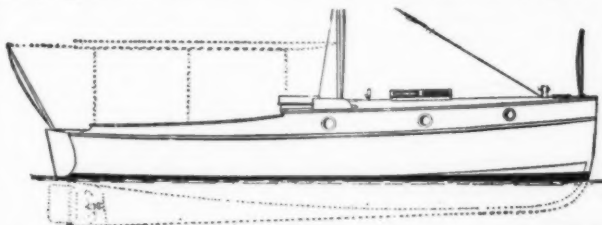
A sturdy, well constructed, handsome boat. Built to withstand the trying conditions along the Atlantic coast.

21-FT. RUNABOUT

Beam 5 ft. cedar planking, copper fastenings, oak trim, back-matack stem, special rabbetted chine, special backmatack and oak frames, mechanical devices, shaft log, 2 cylinders, 7 h.p. Erd motor, reverse gear, etc. Speed 11 miles per hour. **\$495.**



28-FT. CRUISER. Beam 8 ft. 4 in., oak frames, cedar planking, special rabbetted chine, toilet, lavatory, ice box, galley; plenty of locker space; sleeping cabin; large, self-bailing cockpit; 2 cylinder 14 h.p. Stanley motor, reverse gear, sailing lights, fog horn, whistle, cushions, etc. Speed, 11½ miles per hour. This little craft is extremely well laid out and has the cabin accommodation of the average 33-ft. cruiser. **\$1225.**



K. D. FRAMES & COMPLETED LAUNCHES

SIX MODELS:

18 FT. LAUNCH	22½ FT. AUTO EXPRESS
21 FT. RUNABOUT	26 FT. RUNABOUT
30 FT. HYDROPLANE	38 FT. CRUISER

YOU CAN BUILD ONE

No steam bending. Instructions printed in simple, non-technical language. No moulds to make. Send for Catalogue.

AMERICAN LAUNCH CO., E. 38th St., Bayonne, New Jersey

Baldrige

Reverse Gear

Questions of
Mr. Careful Gear Buyer
No. 5

"Can Reverse Band Bind?"

Steer clear of gears with only one compression cam at top, and those resting on lugs projecting from reverse band. They are sure to bind and cause friction and lessen the gear's efficiency.

"Baldrige" Gears have double cam action and are supported from the bottom by a lug which fits into housing. The reverse band is entirely free from drum, frame and housing—it can't possibly bind or heat, and that means longer life and better service in the "Baldrige."

We have a booklet we want you to have. It tells other points of "Baldrige" superiority.

"The gear with the unbroken main shaft"

The Baldrige Gear Co.

678 W. Grand Blvd.
DETROIT, MICH.

Handled in Canada by The
Canadian Fairbanks-Morse
Co., Ltd.



DONT BLAME YOUR MOTOR. GET A

BRYANT & BERRY

PROPELLER

SPEED GUARANTEED

We Guarantee 1 to 3 Miles Per Hour

To Increase the Speed of Your Boat

This is the guarantee we have been making for the past five years, the guarantee under which we have sold thousands of B. & B. propellers. This is your protection and insurance of satisfaction when you buy a B. & B. wheel. You don't have to depend on argument or unfounded claims.

B. & B. propellers give you the highest degree of speed and power your boat and engine are capable of. Their efficiency is as near perfection as it is possible to attain. They reduce the percentage of slip and produce the maximum propelling force for the horsepower used.

The materials and workmanship used in B. & B. wheels are equal in superiority to the design. We use a special bronze as strong as steel. The accuracy and finish are beyond criticism. And in spite of all this, our prices are lower than for any other make of wheel.

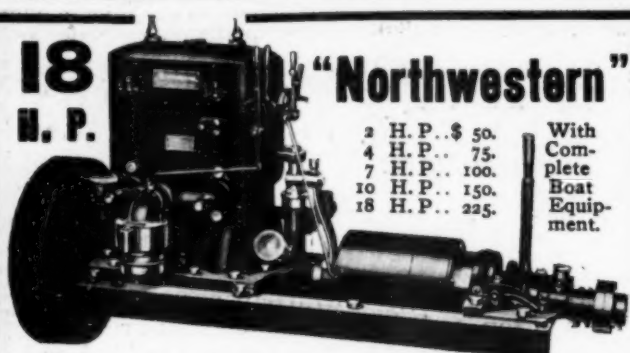
When you buy a propeller, get a genuine B. & B.—don't accept a substitute or imitation. Look for the name "Bryant & Berry" stamped on the hub. Certain peculiarities of design make it impossible for copies of our wheels to equal the originals in efficiency.

Do not fail to see the above in E. J. Willis Co. section at the coming Motor Boat Show.

BRYANT & BERRY COMPANY
28 WEST ATWATER ST. DETROIT, MICH.

Washington and Alaska Distributor, S. V. B. Miller, Seattle, Wash.
Canadian Fairbanks-Morse Co., Canadian Sales Agents.

E. J. WILLIS CO. - - - New York Agents

18
H. P.

"Northwestern"

3 H. P.	\$ 50.	With Com- plete Boat Equip- ment.
4 H. P.	75.	
7 H. P.	100.	
10 H. P.	150.	
18 H. P.	225.	

Compact, Long Service, High Duty Engines

The most powerful, compact and reliable engines for their size in existence. Not the flimsy built engines—over rated in horsepower and with innumerable springs, cams, gears and parts to rattle loose and give trouble, but heavy service, high duty engines of medium weight and extreme compactness. Equipped with the Rosholt patented gas tight bearings giving high compression and extremely low fuel consumption. Highest grade float feed carburetor, flange couplings, electrical circuit break reverse lever, brass plunger pump and brass fittings throughout, Northwestern water and spark proof commutator without beveled gears or complicated timing device. They are simplicity personified—nothing to get out of order and nothing to wear out except the main bearings which can be replaced at a nominal cost. Strictly the highest grade engines ever sold at a moderate price. We also furnish

Complete Lighting Equipments.

Comply with government requirements and save damage suits. These equipments include high-grade charging magneto with automatic electric cut-out for charging storage battery, also a 6 volt, 80 ampere, heavy service storage battery; long distance searchlight, electrical hand lamp, electrical horn and complete switchboard with registering volt meter, etc. Send for 1914 catalog.

NORTHWESTERN MOTOR COMPANY

771 Spring St.

Eau Claire, Wis.

U.S.A.

7 H.P.

Packard

CABLE

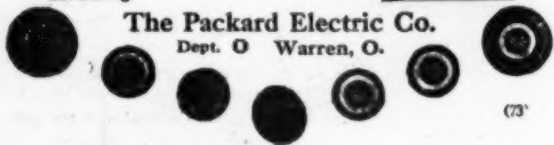
Put Packard Cable in your boat when you rewire it. You won't have to rewire again next year. Packard Cable is made to resist heat, water and oils for years. Send for sample, folder and price list, mentioning name of your dealer.

A Book You Need

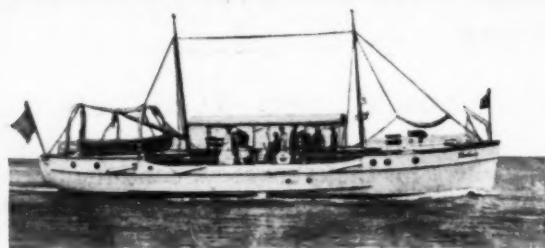
Makes you familiar with every electrical device on your boat. Contains 48 pages of real information about generators, storage and dry cell batteries, separate lighting sets, wiring, high and low tension ignition and U. S. Marine regulations, including lights, life preservers, fire extinguishing apparatus, etc. Sent postpaid for 25 cents to cover cost of printing. Contains no advertising.

The Packard Electric Co.

Dept. O Warren, O.



(73)

**AGAIN WE SUGGEST A "RACINE MADE CRUISER"**

WRITE TODAY FOR

Catalog No. 17 of Sea-Going Cruisers—Day Cruisers—Tugs and Commercial Craft.
Catalog No. 16 of Family Motor Boats—Speed Boats—Shallow Draft Boats—Runabouts, etc.
Catalog No. 14 of Row-boats—Canoes—Hunting Boats—Dinghys and Small Craft.

Years of practical experience in boat building enables us to give you the very BEST IN

WORKMANSHIP, MATERIAL AND FINISH
 at the Minimum COST

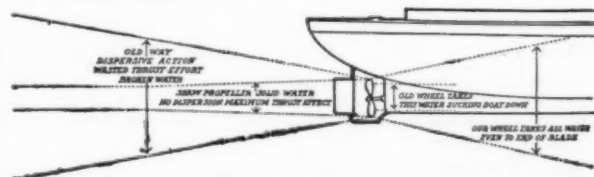
RACINE BOAT COMPANY

1615 Racine Street Racine, Wisconsin, U. S. A.



The "SHAW" Propeller Patented

GUARANTEES
 Greater Efficiency and Gives
 More Speed Than
 Any Other Make.



is designed to secure the maximum thrust returns from every square inch of its surface—AND DOES SO. Eliminates objectionable over-squatting of the boat's stern, and minimizes vibration.

MADE OF THE FINEST MANGANESE BRONZE PROCURABLE.
 Prices and further particulars

SHAW PROPELLER CO., Board of Trade Bldg.
 BOSTON, MASS.

Steer for Carpenter's for your Marine Supplies and Motor Boat Accessories

Concentrate Your Purchases

with a modern, progressive supply house,
centrally located, doing business with a
big, clean stock in an up-to-date plant.

GEO. B. CARPENTER & CO.

430-440 Wells Street, Chicago

"The Great Central Market"

Manufacturers and Jobbers of Marine Supplies
Motor Boat Fittings, Boat Tops, Racing Sails, -tc.

OUR NEW 1914 CATALOG

will be ready about February 15th. Send in your
application now, with 20c. in stamps to cover postage.

We refund this on your first order.

This new book will be the most
important Marine Supply Cata-
log in the trade.

Look for us at the Chi-
cago Motor Boat
Show.



A Detroit Oiler is a profitable investment

A Detroit Force Feed Oiler insures you against wasted
oil and a damaged engine.

It guarantees that your engine won't be laid up by the
many troubles that come from faulty lubrication.

And it pays big dividends in freedom from bother
and delay.

There is a Detroit Force Feed Oiler for every engine.
Made in all sizes and all numbers of feeds with pulley,
ratchet and gear drive.

A Detroit Oiler remembers for you

The Detroit Oiler starts and stops with the engine. It auto-
matically changes its rate
of feed as the engine
speed changes.

You never have to
bother with a Detroit be-
cause it remembers for
you.

Once adjusted, it never
has to be regulated. It
gives you efficient, auto-
matic, dependable, trouble-
proof lubrication that
never requires any atten-
tion at all.

Write today for catalog
P64 and full information
stating in what kind of
engine you are interested.



On sale in Canada by the Canadian Fairbanks Morse Co.

DETROIT LUBRICATOR COMPANY.
DETROIT, U. S. A.

Largest manufacturers of lubricating devices in the world

RELIANCE-ROCHESTER MARINE STEERING GEARS

26 Types

A wheel
for every
type of boat

Endorsed by the
world's foremost de-
signers and builders.
For racing boats, run-
abouts, cruisers and
work boats. We are
the exclusive manu-
facturers of the
scored drum
type of steer-
ing control.

"Baby"
Reliance-Rochester
"A Perfect Little One"



Built to
meet the
demand for a
"Reliance-Rochester"
of smaller dimensions
and of the same high grade
material and workmanship.

Write for literature

W. S. HALL COMPANY
1223 Cortland Street, Rochester, N. Y.

FIX UP THE POWER PLANT TOO!



When you overhaul your motor
boat this winter, don't think that a
little paint and varnish is all that's
needed.

Get down to "brass tacks"—go over her
power-plant—see if you can't find your way
clear to dispose of that risky, trouble-mak-
ing motor and put in a *real* power-plant—



The Doman has construction of exceptional merit. Compact, strong, perfectly
balanced; simple to operate; all working parts accessible. Built in all sizes
from 6 to 60 H. P.—2 to 6 cyl.—light, medium and heavy duty.

GIVES YOU GREATER SERVICE THAN YOU EXPECT

The Doman is not sold on a basis of its maximum efficiency. Even its very
horsepower is rated on low speed. You can expect every bit of service and
efficiency that is promised you in a Doman, and instead of being disappointed
you will be surprised to find that you get more than we promised—more than
your most optimistic expectations.

You should know all about the Doman. Our catalog gives full details that
are of vital interest to the man who is contemplating buying a marine motor.
Let us have your request for a copy in tomorrow's mail.

H. C. DOMAN CO., Dept. C, Oshkosh, Wis.

Eastern Distributors—G. H. Scanlan, 202 Ful-
ton St., Hudson Terminal Bldg., New York,
N. Y. Western Distributors—S. V. B. Miller,
12 Marion St., Seattle, Wash. Southern
Distributors—Gibbs Gas Engine Co.,
Jacksonville, Fla. Canadian Distribu-
tors—Canadian Fairbanks-Morse Co.,
Montreal, Toronto, and St. John



When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.



NEW NIAGARA DESIGNS

NOTE THESE IMPROVEMENTS

No noise, no vibration, electric starters, electric lights, foot-pedal reverse control, plate-glass windshield, self-filling oiler, and many other little conveniences designed for your comfort, not found on the average boat.

CRUISERS RUNABOUTS SPEED BOATS

Send for Plans and Specifications

NIAGARA K D BOAT FRAMES

offer the amateur builder an absolutely certain means of obtaining a high grade boat at reduced cost. Each part is guaranteed to fit. "See Us at the New York Show."

Send 5 cents for 48-page illustrated book of designs

NIAGARA MOTOR BOAT CO.

210 SWEENEY STREET

NORTH TONAWANDA, N. Y.

VALLEY BOATS

SAGINAW CYCLECARS

AT THE NEW YORK and CHICAGO
MOTOR BOAT SHOWS



New 19 ft. x 5 ft. Runabout. Powered with 12 H. P. Kermath Motor. Speed over 16 Miles

We build Speed and Family
Runabouts, Detachable Motor
Rowboats, Cruisers, Day
Cruisers :: :: :: ::

Our Hydroplanes won many 1913 races

Write for Information

VALLEY BOAT & ENGINE CO.

608 HESS STREET

SAGINAW, MICH.

VIM

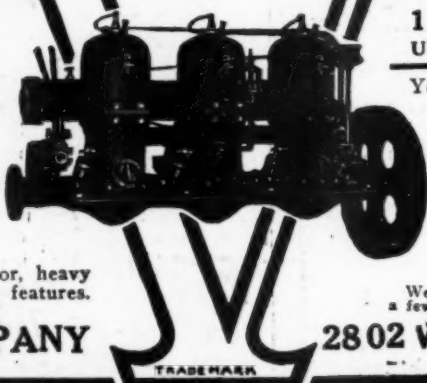
The Boat
Builders'
"Stand-By"
—The Boat
Owners' Pride

MOTORS

5 to 55 h. p. 3 KINDS—
SPEED REGULAR HEAVY DUTY

Strong, neat, simple—absolutely dependable. Give honest, enduring service—constant satisfaction. Win your enthusiastic confidence. Easily accessible—crank case conveniently opened from either side. Non-backfiring. Double ignition. Easy starting fly-wheel. Connections for rear starter. Equipment includes Paragon reverse gears. Mea Magnetos, Noxon distributor, heavy brass fittings and many other exclusive features.

VIM MOTOR COMPANY



1, 2, 3 and 4 CYLINDER
USE GASOLINE OR KEROSENE

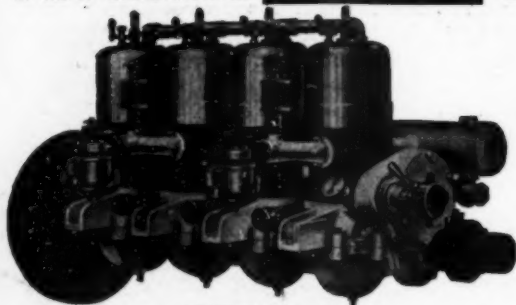
Your boat, equipped with a VIM, will make your day or evening on the water—with the pure air, refreshing breeze—the lure of the great outdoors—one of exhilarating enjoyment and healthful recreation. Thousands in use, many of them eight or nine years old. The old boatman picks the VIM. Read twenty-seven reasons why in our new book, "Boating Facts."

Send for Your Copy Today

We still have a little open territory where we can use a few more good agents. Write for proposition.

2802 Water St., SANDUSKY, OHIO.

Two Motors that have made The Waterman Reputation World-Famous



WATERMAN B-4
4 Cylinder, 2 Cycle, 24 H.P.

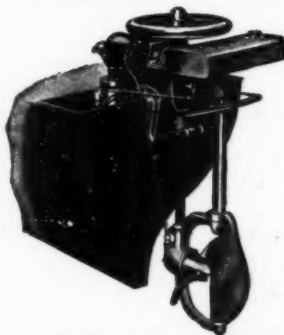
Sturdy, dependable, powerful—Waterman Motors meet the severest tests whether of rough open sea or extended speed contest. For pleasure boats, rowboats, hydroplanes, work boats—there's a Waterman for every purpose. Every one is guaranteed for life—

Waterman "Porto"

Sold to you direct from factory

This famous midget gives 2½ to 3 H. P.—weighs but 59 lbs. complete, propeller, rudder and all. Copper-jacketed; under-water exhaust; steers with tiller ropes. Drives an 18-ft. rowboat 7 miles per hour. 4 hours on a gallon of gasoline. Ninth year of success—it's the original.

Write for catalog, showing latest models. It's free—write to-day



WATERMAN MARINE MOTOR CO., 201 Mt. Elliott Avenue, Detroit, Mich.

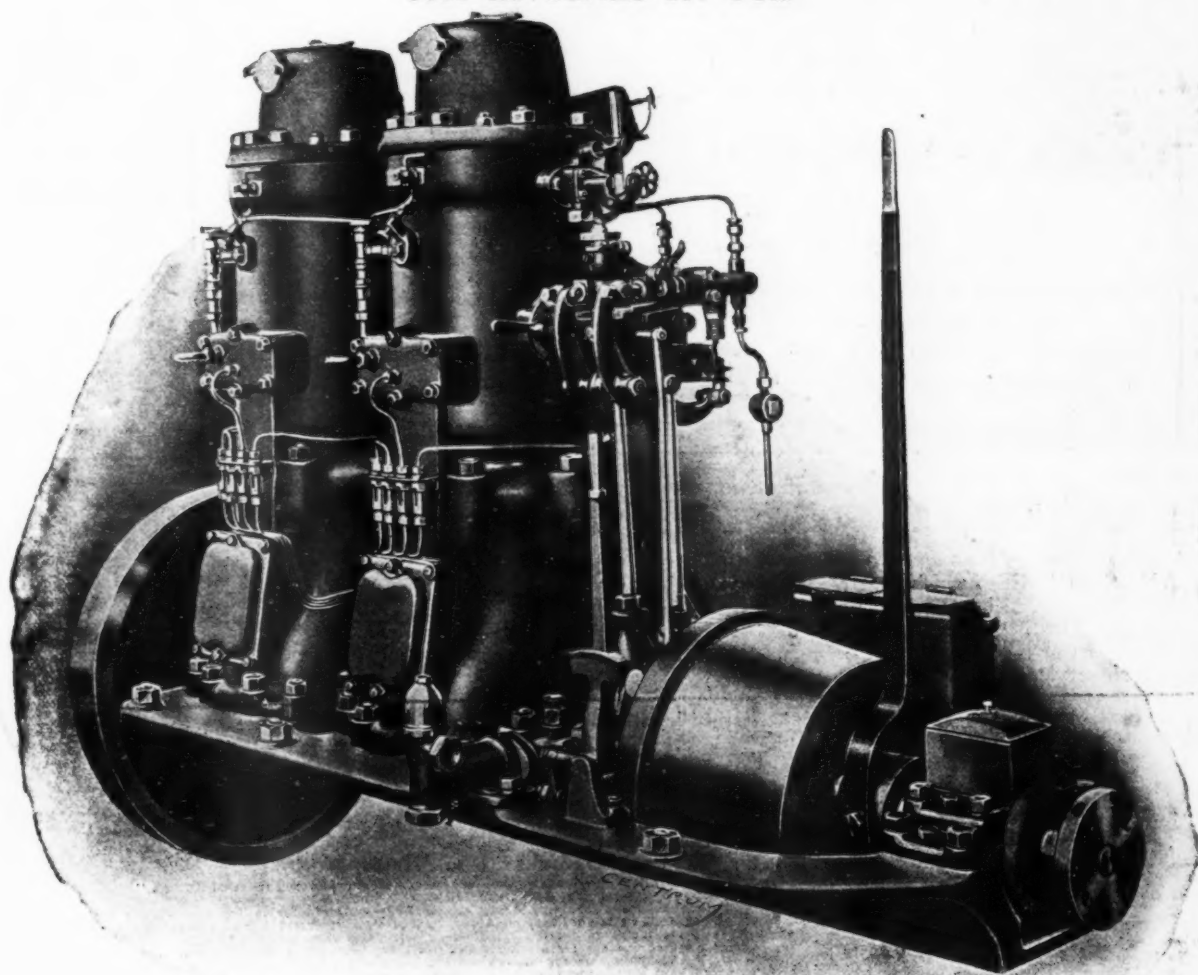
Canadian Fairbanks-Morse Co., Ltd., Exclusive Distributors for Canada of Outboard and Model K Motors

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating.

BOLINDERS MARINE OIL ENGINES

The Result of Twenty Years' Experience
Uses Any Grade of Crude (Fuel) Oil

6000 ENGINES IN USE



160 B.H.P. DIRECTLY REVERSIBLE

Sizes 5 to 320 B.H.P.

BOLINDERS MARINE OIL ENGINES

J. & C. G. BOLINDERS, *Mfrs.*, Stockholm
Address 30 Church Street New York

A 15 H.P. BOLINDERS MARINE ENGINE is DISPLAYED at MOTOR BOAT SHOW, MAD. SQ. GARDEN

WONDER ENGINES

15 Horse Power-20 Miles per Hour

Complete for only \$300.00

THE BEST ENGINE ALSO
THE MOST POWER FOR THE
LEAST MONEY THIS IS THE
PROPOSITION
WE OFFER YOU IN OUR LINE OF ENGINES

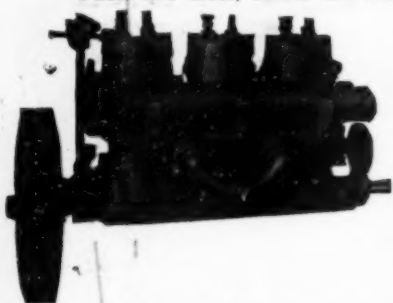
The Engine That Gets There—and Back

Your engine can make or mar the pleasure of motor boating. If you cannot have confidence in your engine, all the sport is taken right out of the most delightful outdoor recreation.

To "swish" by the other fellow and give him your rollers—there's where the real fun comes in. And when you want to turn around and go home, to give your engine a crank and have her respond—that's what gives you confidence.

Wonder engines have proven their ability to work under all conditions where steady, dependable service is required, either in the pleasure or in the work boat at low operating expense. That is what you are looking for and what you get in the Wonder. Now it is not hard to decide about your engine after you have seen our catalog.

Facts are facts, so let the real mechanical points settle the question for you. We ask for your order only on this basis.

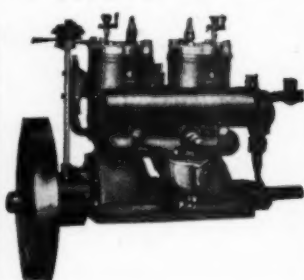


10 H. P.

Two Cylinder
Weight 200

Price
with full equip-
ment

\$200.00

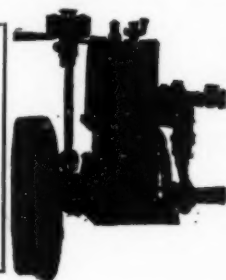


5 H. P.

Single Cylinder
Weight 100

Price
with full equip-
ment

\$85.00



EVERY WONDER ENGINE GUARANTEED FOR FIVE YEARS. EASY PAYMENT PLAN

Catalogue is just full of valuable information for the motor enthusiast. It is free. Attractive proposition for a few more live agents.

WONDER MANUFACTURING CO., 260 Tallman St., Syracuse, N. Y., U. S. A.

For Hard Service—and Lots of It

LAMB ENGINES furnish that complete reliability so essential for satisfaction in busy commercial boats which must be ready for hard work, and lots of it, every day in the year. This is the hardest possible test of a marine motor. Quality must be built into every part of the motor during its manufacture if it is to stand up in the test of hard commercial service.

Those who know the reputation the Lamb has earned in all classes of high grade pleasure boats and cruisers will be interested in the following letter from the owner of a Lamb motor used in commercial service:



Motor Tug "Solicitor"

Lamb Engines are built in a large line of models, all of the four cycle type, each model being especially designed for a certain class of work. There is, therefore, a Lamb Motor exactly adapted for each type of boat. When you have found the model which was designed for your boat, you will have the most reliable, economical and satisfactory engine made for your purpose.

Write today for our handsome 1914 catalog, giving prices and full information and specifications. Models from 2 cylinders, 12 H.P., to 6 cylinders, 150 H.P.

Lamb Engine Company, Incorporated

Factory and General Offices, Clinton, Iowa, U. S. A.

Lamb Engine Company of New York

Distributors to the Atlantic Coast
States and Eastern Canadian Agencies

Hudson Terminal Bldg.,
30 Church St., New York

SMITH & McCOY
DRY DOCK

MARINE RAILWAY &
REPAIR SHOPS

SHIP AND ENGINE
BUILDERS

Norfolk, Virginia, December 31st, 1913.

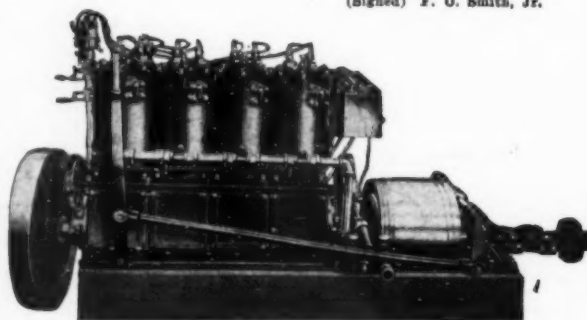
LAMB ENGINE COMPANY, Clinton, Iowa.

Gentlemen:—We are enclosing photo of our Motor Tug "SOLICITOR," dimensions, 40' x 13' x 4' 6"—40 H.P. LAMB ENGINE.

This boat is used by our Harbor Representative for taking care of our business around the harbor and in Hampton Roads, and consists of everything in general, from carrying gangs of mechanics to foreign ships at anchor, to towing yachts and schooners to and from sea. We also use her for moving vessels of every description in and around our docks.

We built this tug of extreme beam and extra heavy construction throughout, with a view to hard service, and we take pleasure in saying, after having been in commission 9 months, that the engine has given this service every day of this time, and furthermore, does it quietly. We are always glad to speak well of the Lamb Engine. With sincere wishes for a happy and prosperous New Year, we are,

Yours very truly,
SMITH & McCOY,
(Signed) F. O. Smith, Jr.



4 cyl., 40 H.P. Heavy Duty.

HOLMES MOTORS



Holmes Motors are used where utmost reliability is essential. Ordinary motors may be good enough for ordinary service, but in motor life boats and in the boats of those private owners who can afford to discriminate, the Holmes has no peer. Holmes owners know the economy of quality.

New Bedford, Oct. 14, 1913.

Holmes Motor Company, West Mystic, Conn.

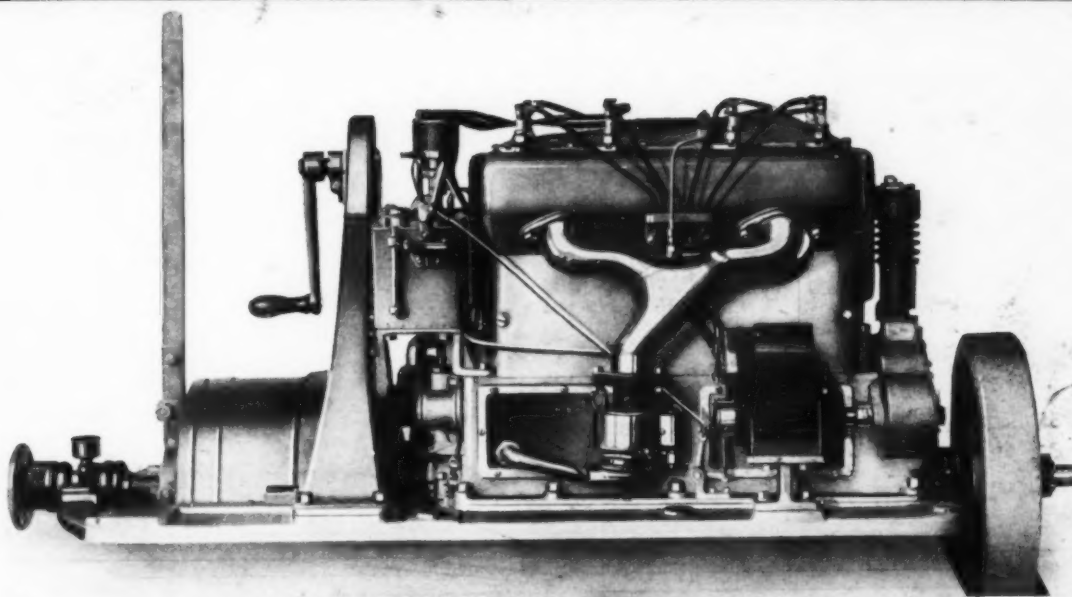
Gentlemen: The six cylinder life boat model engine installed in the launch "Squid" has proved very satisfactory. Its flexibility, economy of gasoline and oil, and freedom from vibration at all speeds, are especially noticeable. I have had absolutely no engine trouble though making some long runs in rough water for a small boat.

Respectfully yours,

NATHANIEL HATHAWAY.

If there is not a Holmes agent in your territory, we want one.

**THE HOLMES MOTOR
COMPANY, INC.**
WEST MYSTIC, CONN., U.S.A.



LOEW-VICTOR 30 H. P. RUNABOUT MOTOR

Equipped with or without Electric Starter

The tremendous popularity of this engine is proof of its high merit.

Ten other models — 6 to 150 H. P.

Write for 1914 Catalog.

LOEW-VICTOR ENGINE COMPANY, - CHICAGO



OFFICE OF THE COMMODORE
LOCUST AVENUE AND EAST FIFTEENTH STREET
BROOKLYN, NEW YORK

November 11th. 1913

Mr C.A.Criqui,
Sterling Engine Co.
Buffalo, N.Y.

Dear Mr. Criqui:-

I cannot speak too strongly of
the merits of the Sterling Engines, which have
proven so dependable in my boats this Summer.
None of the other makes of engines that were
submitted to me were at all reliable, and I owe
all the victories of the last two seasons to the
Sterling Engine.

Very truly yours,

Alvan Blackton



What a Sterling has done for
others a Sterling will do for you



100

100

100